

MARCH, 1876.



THE AMERICAN FARMER

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BALTIMORE MD

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CHEMICAL LABORATORY OF P. B. WILSON, No. 32 SECOND STREET, BALTIMORE, July 30, 1873.

Joshua Horner, Jr.—Dear Sir: The following is the result of analysis of a sample of your Bone Dust drawn by myself from a lot of seven tons lying in your warehouse:

Moisture, (deter. at 212° F.).....	3.74 per cent.
Organic Matter.....	40.12 per cent.
Containing—Nitrogen, 4.08; Ammonia 4.96.....	
Inorganic Matter.....	56.14 per cent.
Containing Phosphoric Acid.....	24.52 per cent.
Containing Bone Phosphate of Lime.....	68.52 per cent.
Insoluble Matter.....	2.61 per cent.

This is the BEST SAMPLE OF BONE DUST I CAN FIND IN THE MARKET, and call your especial attention to the LARGE PERCENTAGES OF VALUABLE MATERIAL for the improvement of the soil, and to the SMALL PERCENTAGES of moisture and insoluble matter

Respectfully, etc.,

P. B. WILSON, Analytical and Consulting Chemist.

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IMPROVED LIVE STOCK,

CATTLE, HORSES, SHEEP, SWINE and POULTRY. In this Department we buy only from breeders of established reputation of the several kinds, and cannot undertake to procure ordinary farm stock, such as draft horses, milch cows, &c. In this vicinity great attention is paid to some particular breeds of stock, and specimens can be had here which are nowhere to be surpassed.

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Sam'l Sands & Son,

EDITORS AND PUBLISHERS AMERICAN FARMER.

No. 9 North St., Baltimore, Md.



Edwards Hawkins

THE AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." Virg.

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. V.—No. 3.]

MARCH, 1876.

[NEW SERIES.

Correspondence.

Chemical Manures and the Wheat Crop.

[Continued from the January No. of *American Farmer*.]

Messrs. Editors American Farmer :

It is of the utmost importance that the practical farmer should understand the character of his soils, as well as the minerals or rocks from which they are formed; otherwise he will be always working in the dark in the applications of his manures and fertilizers. Our soils are so diversified, and so differently constituted, that no one fertilizer, and no particular system of management, can be made applicable to all. In order to adopt and apply an intelligent system of farm economy, the practical farmer should not only understand the character of his soils, but he should understand their wants: the kind and quantity of the 14 elements needed to render them productive. For the want of this necessary information, much time, labor and money have been squandered in the application of fertilizers. And this has been more particularly the case with lime. This writer hails from the Piedmont region of Eastern Virginia, and hence his teachings are mainly applicable to this particular locality.

Soils are formed from the disintegration of rocks or minerals. The process by which these rocks have been transformed into soils has been going on by a variety of agencies ever since the creation of the world, and is still in progress. Soils are divided mainly into two classes—sedentary and alluvial; and the two are farther divided into a great number of sub-divisions.

Sedentary soils are those that remain where they are originally formed, covering and contiguous to the rocks from whose disintegration they originated. These soils have usually little depth. An inspection of the rocks underlying such soils often furnishes most valuable information touching the character of such soils. Alluvial soils are such as are generally found on our branch, creek and river bottoms, and are sometimes termed transported soils,—having been put in place mainly by the action of waters.

The different kinds of rocks and minerals on the earth's surface are very numerous and diversified. But there are only a few of the most

prominent and leading varieties that give character to our soils. The varieties peculiar to this region of country are feldspar, hornblende, garnet, mica, and quartz. These rocks contain all the mineral inorganic elements in quantities more or less abundant, and which are given to the soil in the process of disintegration, which is constantly going on through the agency of water and the weather.

All of the rocks or minerals just mentioned are distinguished by some particular element which they contain in excess of others, and which gives character to the soil which they form. Thus potash is the leading element in feldspar, of which it contains about 17 per cent.; as lime is the leading ingredient of hornblende, of which it contains about 15 per cent. In the tobacco-growing regions of Eastern Virginia, feldspar is found in great quantities, and may be seen almost everywhere lying on the surface in detached pieces, or in numerous beds underlying the soil.

Feldspar is a rich and valuable mineral, chiefly on account of the potash it contains—some specimens running up as high as 30 per cent. of potash. Feldspar also contains silica, soda, lime, magnesia, alumina, and the oxide of iron.

All soils that have feldspar for their basis are particularly suited to the growth of tobacco, and the feldspar lands of Eastern Virginia are the best tobacco lands in the world.

Hornblende is a mineral of dark green or black color generally, somewhat softer than feldspar. The leading element of this mineral, as before observed, is lime. It is a very valuable mineral, and its presence gives evidence of a good soil, and more particularly adapted to the growth of wheat, tobacco and corn. In some localities in Eastern Virginia hornblende is found in large quantities, constituting the basis of all such soils. The hornblende soils may be known and distinguished by the black sand that is invariably found in the streams running through them. Besides lime, hornblende contains silica, magnesia, alumina, and oxide of iron.

Mica bears the name of isinglass. It exists in considerable quantities throughout this region, being found either imbedded in blocks of quartz or mixed up with the soil in small particles. It contains silica, potash (about 6 per cent.), soda, magnesia, and oxide of iron.

Quartz is one of the most common and abundant minerals on the earth's surface. The leading ingredient of this mineral is silica. Silica unites chemically with some of the other mineral elements, and forms a number of compounds called silicates; and in this form it enters into the growth and structure of all plants. It is a most important element, but it exists so abundantly in all soils that it is never used as an ingredient of fertilizers. Quartz is a poor mineral, and its presence in much quantity gives evidence of a poor soil.

Garnet, usually known as iron rock, is also found in large quantities in some localities here. The leading element of this mineral is lime. It contains also silica, alumina, oxide of iron, and oxide of manganese. In some specimens this lime amounts to 20 per cent. The large quantity of lime it contains makes it a very rich and valuable mineral. Soils of which it forms the basis are generally known as strong, heavy clay soils, finely adapted to the growth of wheat and clover, but not much suited to tobacco. The presence of this mineral always indicates a strong, durable soil.

The soils of Eastern Virginia lying above tide-water have a rock or mineral basis. Although such soils are generally not so rich or productive as alluvial soils, yet they possess one very important advantage over them. They cannot be exhausted, strictly speaking. They may be run down and so far reduced in fertility as not to yield remunerative crops. You may exhaust them of their vegetable or organic matter; but holding as they do most if not all of their mineral elements in inexhaustible quantities—in other words, having these minerals as their basis, it is impossible to reduce them to such a state of exhaustion as that they may not be reclaimed by returning to them the organic elements. Not so, however, with the alluvial soils: they are capable of entire exhaustion. Having no mineral basis from which to keep up an indefinite supply of the mineral elements, when these have been exhausted there is no practical means of restoring them. On the contrary, the constant and gradual disintegration of the rocks constituting the basis of sedentary soils is sufficient to keep up the supply of the mineral elements indefinitely, and render entire exhaustion impossible. When such soils have been run down below the remunerative point, you have only to restore the exhausted elements, when their original fertility may be at once restored.

It will thus be seen that the soils of Eastern Virginia are exceedingly rich in the mineral elements. The richest and best variety of minerals is found abundantly here, and constitute the basis of her soils; and this great advantage, taken with the salubrity of her climate, the productiveness of her soil, her abundant supply everywhere of wood and water, and the great variety of her agricultural products, ought to make her the "garden spot of the world."

A few years ago, the Russian Government sent to Virginia one of her best scientific men to learn our mode of cultivating tobacco. After having spent several months in prosecuting the object of his mission, and in the examination of our soils, he stopped, on his return home, in Richmond.

In a conversation with Mr. Ott, the very intelligent and well-informed Secretary of the Southern Fertilizing Company, he was asked by Mr. Ott what he thought of the soils of Virginia. He replied in a very emphatic manner: "Your Virginia lands are the best in the world. They have a rock basis. They cannot be exhausted, and with the proper management you can make them as productive as you please."

From this very brief examination into the character of the soils of Eastern Virginia, it will be seen that in the virgin state at least they contain all of the mineral elements of plant food, lime included. This fact has been proven not only by scientific examinations of these lands, but also by careful experiments. Some 15 or 20 years ago, Prof. Wm. Gilham, one of the best chemists in America, made an examination of these soils, and in his admirable Report, speaking of lime, he says: "I have already stated that soils in their virgin state must contain sufficient supplies of lime. It is true that it exists in the soil, principally in the form of silicate of lime; still it is directly available for the wants of vegetation; and that in every instance in which I made an analysis of a soil or sub soil, I had invariably found lime, whether the soil was a virgin one or had long been in cultivation.

"It will be remembered, too, that black sand is found in greater or less quantity in nearly all of these soils, and that in most cases hornblende, which is subject to disintegration in the soil, and which contains from 10 to 14 per cent. of lime: I have made numerous inquiries of the most successful farmers in all parts of the country, who have used lime themselves or have seen it used, and in not one instance did I hear of its producing any marked effects.

"We may conclude, therefore, that for the ordinary crops at present grown in the country, the use of lime is not necessary.

"Lime, however, acts mechanically, and may sometimes be applied with very decided benefit, even when the soil contains sufficient supplies of lime for the ordinary wants of vegetation. It hastens the decay of vegetable matter, facilitates the decomposition of various compounds of the soil, whereby the available supplies of mineral force of plants become greater."

As before observed, the tobacco crop requires a great deal of lime. An ordinary crop draws about 45 pounds per acre from the soil. It occurs to me, therefore, that it might be very profitable to apply lime to our tobacco lots, more especially when they have been heavily manured with coarse farm pen-manure, or any unrotted vegetable substances. Such applications should be made in the fall, so that the lime may become thoroughly incorporated with the soil before any fertilizers have been applied. Ordinarily, however, it is clear that our lands do not need liming in the ordinary way, and lime may be safely dispensed with in the compounding of our fertilizers.

WM. HOLMAN.

✂ Hon. M. H. Cochrane, Compton, Canada, has refused an offer of \$25,000 gold, for one of his Duchess cows. Our informant thinks it was for the 10th Duchess of Airdrie, roan, calved June 9, 1868, by Royal Oxford 826, out of 7th Duchess of Airdrie, by Clifton Duke 124.

Gypsum as a Fertilizer.*Messrs. Editors American Farmer:*

The inquiry frequently is addressed to the editor, and through him to the readers of agricultural journals: "What is the best method of using gypsum?" "Shall I use it in my compost-heap?" "Will it absorb the ammonia by sprinkling it in my stables?" "Will it increase my crops by applying it to the soil; and how much, and how shall I apply it?" &c., &c. Such are some of the questions propounded for an answer, all of which it would be very desirable, not only to those to whom the inquiry is addressed, but also to all the inquirers, to have definitely settled so that it might be as readily and thoroughly answered as could the same questions concerning the application of farm-yard and stable manures to the soil; but with our present knowledge this is impossible. Were all soils and all crops alike composed of the same elements, in the same proportions, and in every respect alike, it would be a very simple question. But while we know that soils vary in composition, and also that soil of similar composition are in different mechanical and chemical conditions, the question is one which no amount of theoretical or practical knowledge can absolutely decide. Not only has the constitution, &c., of the soil, but also the climate and many other causes, an operating influence concerning the effects of the application of gypsum on the soil and the crops grown thereon. Every observant agriculturist well knows that the same fertilizer applied to different soils, and different crops, the same season, will often prove very different in results; on some soils and to some crops they prove much more efficacious than on others, and all that in different seasons they also vary.

In some sections, on particular soils, gypsum proves a most excellent fertilizer and increaser of certain crops, while in other sections, or on other soils, and to other crops, the benefit derived is less than the trouble and expense incurred in its application. The most remarkable effects of gypsum have been noticed where it has been applied to clover and certain other leguminous plants and grasses on certain soils: showing that it is a specific fertilizer, adapted, specially, to specific crops and certain soils only.

Experiments and investigations have been on too limited or restricted scale to establish anything like a uniform theory of its intended application. The most we can do is to advise experiment on different soils and to different crops, and the more extended in locality and soils the better; provided the soils, weather, locality, &c., &c., are accurately noted and results reported: so that comparison of results can be made, and therefrom some general principles be deduced. In making experiments of this nature, everything tending in the soil to affect action should be carefully noted,—such as drainage, sub-soil, &c., &c., together with the kind of crop it is used upon.

Many experiments, in different modes, are yet needed to arrive at anything like a fixed theory, in relation to the action of gypsum in the com-

post heap; so that there is the same difficulty in answering her; so also in answering, definitely, any similar question.

The gypsum of commerce contains a greater or less per cent. of water, according as to the time it has been prepared for market; it is therefore an object to obtain and use it as fresh as is possible. Deprived of its water, gypsum consists of 41.5 of lime, and 58.5, of sulphuric acid; by knowing this, and also whether the soil be lacking in any of the elements which go to make them up, the demonstration of whether the application of gypsum will prove beneficial. But if there is any one thing settled, it is that general farmers will not trouble themselves to find out what elements are lacking or are in abundance in their soils, by analysis; therefore we can only advise experiment by application, and this need not be expensive, as but a limited quantity (one bushel per acre) is required to produce maximum results. In conclusion, then, we say, experiment, and report for the general good.

Westboro', Mass.

W. H. WHITE.

Testing the Continued Action of Fertilizers.*Editors American Farmer:*

In 1873, plots containing one-eighth of an acre were laid out, and the following fertilizers applied, at the rate of \$10 worth per acre for the wheat crop. The fertilizers were sown broadcast and harrowed in. Wheat sown September 17th, 1873. The results on the succeeding crops up to this time are also noted:

FERTILIZERS.	Bushels of wheat per acre		Pounds of hay per acre in 1874		Bushels of corn per acre in 1875		1/2 bu. of ears per 1/2 bu. of ears per	
	In 1873.		In 1874.		In 1875.		In 1876.	
Bone and ashes compost.....	30	28-60	5,553	93	44-73			
Acidulated S. Carolina Rock.....	34	29-60	5,600	93	4-73			
Kainit.....	29	54-00	4,000	87	16-73			
Prof. Villet's Wheat Food.....	33	28-60	4,960	91	8-73			
No fertilizer.....	25	20-60	3,920	81	64-73			
Ground bone, sown broadcast, and harrowed.....	29	38-60	5,648	93	34-73			
Ground bone, 1/2 as above, 1/2 drilled in with wheat.....	31	44-60	5,738	97	56-73			
Ground bone, all drilled in with the wheat.....	33	36-60	5,680	93	64-73			

In the above experiment it will be noticed that the Acidulated S. Carolina Rock gave an increase of 9 2-60 bushels of wheat per acre over the unmanured plot in 1873—an increase of 1,680 lbs. of hay in 1874—and of 11 12-73 bushels of corn in 1875. Now, valuing the wheat at \$1.30 per bushel, the hay at \$15 per ton, and the corn at 50 cents per bushel, we have an aggregate increase in the value of products, in three years, amounting to \$29.93 from one application of \$10 worth of Acidulated S. Carolina Rock. This is only a trifle better than the application of bone applied in the same manner.

JOHN I. CARTER.

East Pa. Experimental Farm, West Grove, Pa.

Agricultural Education in Germany.

Messrs. Editors of the American Farmer:

I will try to give you to-day a description of those schools in Germany founded especially for teaching agriculture, theoretical and practical.

In olden times agriculture was carried on more mechanically: all kind of management and labor was executed as the forefathers found good, and done just at the time when the day of calendar ordered it. Cheap land, cheap labor, a great area, a simple and saving way of life, made farming work pay, and an industrious and healthy farmer could save money. In our days, land is high in price, and has to bring higher interest; labor is expensive; farms are generally smaller, because more divided between members of a family; taxes are very high; all necessities of life are risen; everybody eats and drinks, dwells and dresses himself better than in former days; so that a farmer, to make the most of his estate, not only needs strength and diligence, but also a well-educated, clear head. In these last five decenniums, some branches of science, viz: chemistry, natural philosophy, science of technical terms, are so developed, that a young man intending to pursue agriculture has the opportunity of informing himself, as far as his capacity, his time, and his pecuniary circumstances allow. But it is not alone that he needs special instruction about his business, but a full, perfect education, to awaken his intellect, to improve his mind, and make him a man of a good, strong character. In our old country you will find large estates of many thousands of acres, besides smaller farms of a hundred, fifty, twenty, and even less area; and doubtless a land-owner of so large an estate needs another education from the smaller farmer. The management of a large estate does not allow the proprietor to do the hard work himself, but it wants a higher learning; a more profound discernment of Nature and human life; skill and dexterity in business; and a firmness of will: even the social situation of a larger land-holder demands a liberal education.

Economy is taught in Germany in universities, academies, middle and common schools. The last-named middle and common agricultural schools are frequented by young men of not very high preparatory instruction: these pupils generally in summer do all kinds of farming work, and enjoy in winter more scientific and theoretic discourses. This kind of education is especially given to educate young farmers or overseers on smaller farms; otherwise, to study in universities or academies, a young man has first to go through high schools, where he has acquired an universal knowledge of old and new languages, history of the world, mathematics, geography, and physical science. These students intend to become either teachers and professors of agriculture, or to fill the place of inspectors or superintendents on large estates, or to become large land-holders. There is even a difference between the study of agriculture in universities and academies. In the last-named schools it is intended to teach scholars the branches of science connected with agriculture, and likewise give them all demonstrations and empirical knowledge in the fields belonging to the academy; in universities all instructions are theoretical. In late

years the idea got a footing, that it is better for a young man of good preparatory education to be employed a few years in practical farming, and visit then the university to hear theoretical lectures. These students ought to be of riper understanding, not below twenty years of age. In our universities a great number of professors for all branches of science are placed; so that a young man, besides his special course, may hear any lecture he chooses. That is the reason why in later years agricultural chairs were erected in and connected with universities. These universities are even to our social circumstances more convenient, for the young farmer or land-owner accomplishes his education in the same place and under the same circumstances that our lawyers, preachers, doctors or statesmen do. I will give you about the course of instruction for agricultural students.

1. *Philosophical Discipline*, viz:—History and literature of agriculture, history of civilization, physiology.

2. *Mathematic Discipline*—Universal arithmetic, geometry, geodesy.

3. *Physical Science*—Experimental physics, chemistry, mineralogy, botany, zoology.

4. *Economic Discipline*—National economy, agricultural management, lessons about taxation of farms, book-keeping.

5. *Jurisprudence and Statesmanship*—Science of finance, commercial laws, agricultural laws, agricultural statistics.

6. *Production Lectures*—Land-tilling in general, special plant-raising, meadow cultivation, horticulture, wood-culture, breeding and keeping live stock, feeding rules, veterinary science, information about wool, and horse-shoeing.

7. *Agricultural Technics*—Information about agricultural implements and machines, surveying, leveling, draining, building.

8. *Theoretical and Practical Demonstrations*—Practicing and exercising in chemical and physiological laboratories, demonstrations and dissections in veterinary clinics and anatomy, practicing draining, and estimating soils.

For the middle schools the course of instructions is about—1, agriculture management in general; 2, chemistry and physiology; 3, botany and zoology; 4, arithmetic, English, French, German; 5, history and geography; 6, veterinary lectures, drawing and building, and knowledge of agricultural laws.

For common schools the course is—1, theoretical and practical lessons about agriculture; 2, veterinary lessons and demonstrations; 3, surveying; and, 4, scientific knowledge—a little more than at other common elementary schools. Besides these instructions, young men in middle or common agricultural schools have to practice all kind of farming work, so that they are able, when farmers themselves, to perform all labor in the best way; or, when overseers, to teach every engaged man how, and how much, a working man ought to do. It is desired that other more scientifically educated scholars learn practice on farms or estates a few years before they visit the academies or universities, and study there without manual labor. A young man acquainted at home or in the country with all farming manipulations, and instructed theoretically in a university in all sciences concerning agriculture,

will soon be able to take the direction of a large agricultural establishment, either on his own or his chief's account. Of course, a young man leaving the university is a learned man, not a practical man, at once; but neither is the doctor, the preacher, the lawyer, when leaving the college; but his intellect is so far enlarged, his judgment so cleared, and his self-will so precise, that he will surely beat his path and succeed in his undertaking.

We have at present in all Germany six agricultural academies—at Eldena, Proskau, Poppelsdorf, Munich, Tharand, and Hohenheim; nine universities with agricultural chairs and lectures, viz: Berlin, Halle, Goettingen, Konigsberg, Leipsic, Heidelberg, Jena, Giesen, and shortly Kiel. Giesen was formerly the seat of Liebig. Middle and common agricultural schools number more than 150 all over Germany; some of them, indeed, for special instruction in horticulture, bee-keeping, culture of vines, wine and other fruits. Most of these schools are either wholly State establishments, or the States give liberal subscriptions, and preserve to themselves the principal direction, just as all (even private) schools stand under control of the governments. The lectures to be heard in universities or academies cost a mere trifle; but for lodging and boarding, the students have to care for themselves. In middle and common agricultural schools the pupils receive board and lodging within the establishment, and the price for boarding and teaching is about \$100 to \$120. In common schools the pupils pay only \$25 a year, the rest for their subsistence the State pays.

Experimental Stations.

Besides all these establishments, we have in Germany other institutions for the benefit of agriculture, viz: agricultural experiment and control stations, connected with chemical laboratories; of these there are about thirty in Germany. These institutions are maintained by agricultural societies, and receive only a little aid from the government. Their design is to control all artificial and mineral manures, either delivered by factories or commercial firms, so that farmers are sure to receive such qualities as they have paid for; secondly, to examine, chemically, all kind of soil, whenever proprietors wish to be informed about the contents of their soils; thirdly, to make experiments in feeding animals; to settle the question finally, how to produce the most meat or fat, or the most milk and butter, or wool, in the clearest way; finally to observe and get acquainted with all kind of worms and insects injurious to plants; and with all kind of sickness of plants, and their preventives.

Does it Pay?

Messrs. Editors! you and your readers, as members of a practical nation, after reading my report, may ask, at last: Will all this spending of time and sacrificing money, all this profound learning, all this theory, help to increase the harvest and the income, and therefore the welfare of the farming population? I can sincerely assure you, *it does!* Our country is not all favored by Nature: we have mainly, especially in Prussia, a light sandy soil; a climate not so fruitful as England or France has; we have no

mountains filled with precious metals; and so we have to strive hard for our existence, and farming needs, like all other business and employment, not only a hard-working hand, but an intelligent, clear head, to succeed.

Our agricultural institutions are new yet, and still they enjoy already the acknowledgment of many nations—students coming from all parts of the world to hear lectures on agriculture, and our professors of agriculture wanted and called for in many foreign countries. Our own enlightened farming population is no longer the servant of other classes, since it has the benefit of an education just as good as that of any other high class. And this is not only a social progress—it is a national gain; for, even in our monarchical States, self-government is the order of the day; and a well-educated man in the country has, with us, more opportunity and obligation to administer public affairs than a citizen of a large city. It is for the benefit of the whole country (not only land-holders) when we send representatives into the legislature, men of our own class,—not filling the halls of legislature only with lawyers or merchants, or even revolting politic-prattlers. To fulfil his duty in public service or in the legislature, the land-holder has to be thoroughly educated, and he will be a benediction to his fellow-citizens and to his country.

Yours truly,

E. WENIG.

Neudorf, Prussia, Jan. 30, 1876.

The Failures of Agricultural Colleges.

Editors American Farmer:

The appropriations for Agricultural Colleges all over the United States, with *very few* and rare exceptions, have been misappropriated, and most of them used to bolster up sickly institutions of learning by adding the agricultural department to their institutions, making this department *entirely* subordinate and *totally* insufficient for the wants for which the donation was made. This is one of the reasons why the Agricultural Colleges in the United States, as a rule, are failures. Another reason is, that the majority of those institutions do not consider manual labor necessary; ay! many think it adverse to *liberty* and justice to compel the students to work after they pay for their board and tuition.

The misconstruction of liberty has wrought many evils in our country, and here is one of them. To what does all the theoretical teaching amount, if not sustained by demonstrative practice? And, how is thorough practice to be acquired, if not obtained by actually doing the work? How is a farmer to instruct his hands and direct his work to be properly done, if he is not able to perform it himself and by actual deed show them?

Mr. Editor, let it be well and **DISTINCTLY** understood "that no agricultural college can be a success, *as such*, without proper practical instruction in manual labor!"

By perseverance and industry, *practice alone* can succeed: theory by itself, without practice, cannot!

L. A. HANSEN.

Mississippi.

Our Swamp Lands Looking Up.

Editors American Farmer:

By the close observation and analytical comparison at the German Experimental Stations, as well as by practical tests as reported by Prof. Atwater in the *American Agriculturist*, marsh grass (an article heretofore deemed almost worthless) can be usefully substituted for the best upland hay, by the addition of 4 lbs. oil-cake a day in the ration, and made fully equal to the best hay. As there seems to be no doubt about this, it having been tested in this country as well as in Germany, we have opened to the tide-water land-owner a prolific and inexhaustible source of improvement. He can cut his marsh grass,—to be had in large quantities on most tide-water lands,—mix it with a little cake, and feed it to his cattle of all kinds, and sell his upland hay; or, whether he has upland hay or not, he can keep his cattle thriving, increase his manure heap, and improve his other lands; and, if he has enterprise, he can go still farther, with decided advantage: by digging his best marsh mud and mixing it with his manure, further increase his manure heap.

On many farms from 25 to 200 tons of this grass can be cut, at a cost not exceeding \$5 per ton. This will enable the owners of these farms to increase their stock largely, and improve the quality. We need not stop here: let stock be kept up all the year round; build barns and stables near water; provide feed for summer as well as winter; do away with all inside and outside fences; keep stock at home and make all others keep stock off your premises; underdrain all your lowland of stiff clays, or even low-lying sandy lands underlaid with stiff clays; raise plenty of beef and make plenty of butter; fertilize freely, and you *must* thrive.

On these malarial lands use daily small doses of quinine to overcome the blood-poisoning and preserve the health, which can be done effectually. This also has been well tested. So we repeat, marsh lands are looking up

Baltimore Co., Md.

AGRICOLA.

Wire Fencing.

Messrs. Editors American Farmer:

Wire fencing in Australia has almost superseded brush and post-and-rail fences, on account of the prevalence of brush fires. There, to confine sheep or cattle, the fences are generally from 4.8 to 5 feet high—5 wires and a top rail. I have seen hoop-iron (such as is used to strengthen packing cases) in the place of the latter, strained and run through a saw-cut on the top of each post. A dash of the whitewash brush along it, to make it visible, in the first instance, till the animals are accustomed to it, is advisable. The posts were, of course, of Australian gum; but when the pasture is well fed there is little danger of fire. However, though so much depends upon the size, &c., of the paddock "Farmer" writes about, he might plough up a few furrows on either side during the "fire" season; or at once lay down a few feet in that way in clover, which will always be eaten down close enough. It is always best to throw two furrows together with the plow, when it is possible, under the bottom

wire. Iron uprights, I fancy, he will find very expensive. The posts should be 12 feet apart—every 16th a heavy one, and deep-set, for the "strainer;" the wires to pass through it and be stapled to the intervening.

"Farmer" must use his own judgment as regards spaces between the wires, taking care to place the 3 lower closer together than the upper ones. The roller is the best and most powerful strainer I know of, and costs nothing but $\frac{1}{4}$ hour's work to make.

I forget the Nos. of the wire used, and I fancy the American sizes differ somewhat from the English. The top wire should be a size stouter than the remainder.

If "Farmer" wishes to keep hogs in or out, he must put his wires as close as those of a bird-cage, and I hardly think then the fence would be "hog-proof."

Yours respectfully,

AUSTRALIENSIS IN VIRGINIA.

Amelia Co., Va., Feb. 7, 1876.

Posts for Wire Fences.

Editors American Farmer:

If your correspondent will write to the *Pacific Farmer*, Chicago, and get the address of the manufacturers of barbs for wire fences, I think he will find them much better and cheaper than his ditching plan to keep stock from running against the fence.

The barbs are attached to the wires about every 15 inches. Two wires barbed will turn large stock better than three without. After one encounter stock will keep a safe distance.

His iron and stone base-posts he will find too expensive. Several years ago, while engaged in the manufacturing business, I had drawings made for the purposes of inventing and making an iron post, and also iron and wood together; but concluded to give the right to the public, as my health did not permit my continuing in business.

An old-fashioned iron candlestick suggested the idea. Take a $\frac{1}{2}$ or 1-inch gas pipe and cast on a bottom like a candlestick 6 to 8 inches in diameter, which might be open work to save iron. This being at the bottom of post-hole would prevent the working up of the post and be everlasting.

For a wood fence have the pipe come only 12 to 15 inches above the ground, and bore hole in wood post and drive on to the pipe. Where old gas pipe could not be had, round iron would do. Piping made, just turned together, without braying or welding, would do just as well as gas pipe and be much cheaper. Such posts can be made and not cost over 40 to 50 cents each. For wire fences, with posts once in two rods, a heavier post would be needed. W. M. EVANS.

Amherst Co., Va., February, 1876.

A Reminiscence.

Editor's American Farmer:

The first cargo of Mexican or phosphatic guano which arrived in Baltimore, was promptly sold—though there was no "market" for it—and it was only by accident that it was sent to that port. It was consigned under these circumstances to Stirling & Ahrens, who told me that

"but for the leakage of the vessel it would not have been ordered to Baltimore." Finding that it yielded about sixty per cent., though very wet, I offered to take ten tons at twenty dollars: it being held at \$35. This was my first broadcast application of guano, though I had perhaps previously applied bones in coarse powder, at about fifty cents per bushel.

I now regard both of these as "errors." I doubt whether I ever was refunded the "investment!" I made in either, though I confidently recommended their use to others at the same time, and especially during the next year, when I noticed the dense mat of white clover where "woolly head" previously could hardly exist; and my next neighbor still reminds me of the extraordinary growth of clover on that field as the result of my experiments with bones, &c. Where the seed came from that produced this "mat" of white clover, is still (to me) a mystery, though Judge Chambers told me that when he was a boy his father ridiculed the school-master for hiring the boys to gather the seed, and promised him a crop, if he would plow in April.

I applied the "Mexican guano" broadcast at the rate of two barrels, (say 600 lbs.), and its immediate effect on my oats crop was satisfactory, though this field was not as poor as that to which the first application was made, and the best Peruvian guano fails entirely on such soil. The most expert chemists and geologists differed with me at this time, and ridiculed my ideas as to what I termed a *quasi* super-phosphate, as they could not recognize anything but the "bone phosphate of lime;" whereas I assumed that this was capable of certain peculiarities as to solubility, precisely as sand is sometimes as soluble as sugar, though this is not dependent on its division. (See my essay headed "Nascent Manures" in *American Farmer*, Mar. 1855.) This condition is not universally admitted by "agricultural chemists," and even those who then opposed and sneered at this and all other peculiar relations of chemistry to agriculture which were not recognized in the text-books. What is now estimated as "reverted super-phosphate" is regarded as due to the same category with the phosphate of guano, and worth *much more* than the "bone phosphate of lime," though precisely the same in composition and the *proportion* of its elements, both proximate and ultimate.

During the first year after the application of such material, whether in Mexican guano or the Columbian (which actually had an acid reaction *naturally*), some effect was observable, due no doubt to this partial solubility, and it was asserted that this influence was manifested after twenty years in England, which error I wish here corrected, as I have never been able to recognize any subsequent influence, though I am satisfied that it is possible to mark the spot *indelibly* in any field by the application of ashes or any soil plant-food dumped by the cart-load. After the general introduction of *soluble* phosphates, a brother chip requested me to assemble some farmers and test an improvement in the common wheat drill, (which distributed the manure with the seed and through the same) as he had secured the patent. Many of our best factors

in Philadelphia co-operated with me by gratuitously supplying packages of their several fertilizers in order to test their relative value *as to drilling* properties;—but it then appeared that I had given offence to one of the "raw bone" factors who had previously vaunted my name in connection therewith. I became convinced that a less potent manure was infinitely superior, though made exclusively of Navassa guano without any ammonia (at that time.)

As the most indifferent must ever excel the most concentrated fertilizer—if the latter interferes in the least with the equal distribution of the seed wheat—I advised them to dilute "the raw bone" with half its weight of Navassa, and thus gave mortal offense.

Another error in relation to the relative value of Navassa will be noticed later; the point of this being the question as to the "paying" possibilities of "bought manures" if applied broadcast, and especially the illusion as to the permanent improvement of the soil. Are they to be paid for as a reasonable "investment?"

The drilling on this occasion was equivalent to a heavy broadcast, as the path of the drill was frequently retraced with the same fertilizer until it was expended thereon, and the flukes of the drill were suspended above the surface of the ground in order to exhibit the *uniformity* of deliverance. Thus a narrow strip through several fields received potash, ammonia, soluble phosphoric acid and "blood manure," in distinct and *separate* paths of the drill; nevertheless, I have never been able to distinguish this strip in any subsequent cultivation on either field! Whereas, during the past fifteen years I have frequently published results with the same materials applied to the drill rows *with the seed*, and also in the spring; nearly doubling the crop and thus proving by repeated experiment, year after year, the possibility of a quadruple yield, viz: if a pure super-phosphate can double the normal or natural crop when applied with the seed, it may *again* double this on the same field and crop, if applied in the spring even as late as May, when confined exclusively to the drill rows.

I imagine that it would be impossible to hire any one to experiment *faithfully* as above, in order to get the truth, without the sympathy or even approval of the most expert and successful practical farmers. It seems absurd to weigh the whole of a wheat plant, including the roots, and count the *average* of the heads; also get the weight and specific gravity of many samples of wheat. Such experiments are simply "impossible" and supremely ridiculous, though illustrating European experience 25 years since.

Port Penn, Del.

D. STEWART, M. D.

Our French Letter.

Germination of Seeds in Contact with Fertilizers.

Messrs. Editors *American Farmer*:

M. Vilmorin makes known the results of his investigations, respecting the germination of beet seed. Struck by the irregularity in its germination, he found that the closer the seed was to the mineral fertilizers, nitrate of soda especially, the more slowly it germinated, and in some instances did not do so at all. There was as much

as a month's difference between the germination of seed sown on the unmanured and the manured soil. It would seem, that those manures intended to furnish nitrogen to beet in its after stages, are injurious pending the period of germination. M. Vilmorin also found, that wheat was similarly affected as beet, when the seed was in contact with nitrate of soda and sulphate of ammonia. Further, not only was germination retarded at a period when its activity was most to be desired, but the salts in question promoted an energetic growth of the beets in early autumn, when such development ought to be avoided.

In the north of France it has been found, that the earlier the beet is sown the more certain will be the results; the 20th April is better than the 20th May; also, the greater the distances between the plants the heavier will be the yield,—an advantage, however, only to be sought after when the roots are intended for feeding purposes.

Mineral Manures.

The mineral manure most in favor with farmers, and the least so with the manufacturers, is nitrate of soda: its price is relatively moderate, its assimilation easy, and its effects consequently immediate. But it ought to be ever employed judiciously, and notably with the phosphates, and the salts of potash and lime. Farm-yard manure being nitrogenous, demands that nitrates be associated with it sparingly. The phosphates have been found excellent in promoting germination; but phosphates cannot correct the bad effects of nitrate of soda; were it thus, guano might be employed without fear. The complaints against the use of nitrate of soda for beet, are the consequence of the abuse of that fertilizer, which banefully affects the extraction of sugar, and reduces the fertility of the soil, owing to farmers relying on its stimulating properties exclusively; it is an error to apply a plant with one kind of aliment exclusively. It ought to be remembered that fertilizers require to be rotated as well as crops, and their action well studied,—since some act on the foliage, some on the bulb, and science has not settled as to whether the sugar be formed by the roots or by the leaves.

Veterinary Lectures.

In Belgium, much success has attended the delivery of public lectures on farm animals, how to breed, how to rear, and how to cure them. The lecturers are practical veterinary surgeons. Two hundredweights of nutritive hay being taken as the standard of nutrition, are found to be equal to 8½ stones of oats, and 16 of potatoes. It should be borne in mind, that the richness of food varies with the soil, and its feeding value will vary with the temperament and the digestive powers of the animal.

Hungarian Horses and Cattle.

Since centuries, the great plains of Hungary have been celebrated for their production of horses, which comprise races at once sober and accustomed to privations and climatic changes, but which not the less produce animals with iron constitutions. The pasturage is bad, green fodder is difficult to obtain, and necessity compels dependence on straw and the stems of maize. It is not to be wondered, that the

Austrian government is solicitous about the amelioration of horses. It is not uncommon to find a pair of horses getting over a distance of sixteen miles to meet a train, and, without being baited, return by the same road in two hours. There are 2½ millions of horses in Hungary, or 140 for each 1,000 inhabitants, and there are several races of them also in addition, adapted to mountainous districts, sandy plains, or alluvial flats. The natural breeding studs, of which the chief is at Mezöhegyes, recognize these distinctions, and as the State studs are only intended to supply the absence of good stallions among private individuals, their object is to make themselves as soon as possible unnecessary. There are 1,800 stallions in the four studs, serving 68,000 mares annually, in 525 different districts. The charge for covering varies from fr. 2½ to 37, but the services of a stallion of pure English blood costs as much as fr. 1,000. The stud at Mezöhegyes is a half military establishment, or rather colony, consisting of 86,000 acres, and chiefly devoted to the culture of grain and forage crops; it possesses 2,400 horses, representing nine different races. The foal at its birth is marked by a red-hot iron on the sides, to recognize its race and its sire. Its food is not excessive; one pound of bruised oats when three weeks old, and double that at three months; when separated from the mother, and as far as four years old, five pounds daily in summer, and double that ration during winter. But then the pasturage is excellent. Mildness is the basis of the breaking in of the colts; and by patience and address man dominates them. They are never beaten, and approach the grooms without mistrust or hostility. For each act of submission, they are rewarded with a caress or a morsel of sugar or a cake; and to conquer their timidity or efface their fear, they are surrounded with trained animals. Possessing thus no vices, they can transmit none.

The monster farm in question is provided with hospitals for horses, cattle and pigs, and chemical lectures take place twice a day, and which are attended by the veterinary pupils from Pesth, who acquire a practical knowledge thus of their profession. Bulls are also bred here to ameliorate the native races, for the climate is too trying—torrid days succeeded by polar nights—to think of crossing. Milk not entering into the calculations of Magyar-farming, milch cattle are not in request; besides, such an amelioration would affect, as experience has shown, the value of oxen for labor, and that are only secondary in point of importance to horses. If the training of horses be effected on the gentle system, that for oxen is the reverse. In winter cattle receive but straw, chaff, and maize stems; those employed at work have hay. The annual yield of milk is not more than 900 quarts; 2 cwt. of hay are found to produce 23 quarts of milk, representing 8½ lbs. of butter. The oxen are never yoked till four years old; and, after six months apprenticeship, are capable of nine years work. When aged 13 or 14, they are sent to the large towns to be fattened at the distilleries—some of the latter fatten 1,500 head of oxen at a time. A yoke of oxen plough an acre, 14 inches deep, in a day, and addition to being as rapid as a dray-horse, has met as sure as a Spanish mule.

Insects.

An infusion of tomato leaves has been found excellent to clear plants of bugs—the phylloxera always excepted. The annual report of the official commission on the experiments conducted under its direction during 1875, in the affected districts, on the various plans for destroying the vine bug, concludes, that no remedy has yet been found; that the best powder is too costly in application, and but partial in efficacy; that the old bark ought to be removed from the stems; the eggs destroyed in winter, and a recourse had to American stocks.

P. C.

Paris, January 22, 1876.

Suggestions for the Thoughtful.*Messrs. Editors American Farmer:*

For some time back I have read much about agriculture in several papers that have a place for the farmer. I find many good things; but there does not seem to be much system in them, and often a good thing comes out of season. Not so in the papers devoted almost exclusively to the subject. The old farmer as well as the young likes to read the many good articles pertaining to the various branches and subjects of agriculture. Every portion of the country is adapted to the growth of particular cereals, root or fruit productions; some for hemp; some for cotton; some for sugar-cane, and some for grasses. It is very well that it is so. One section can grow its productions for others, so that whatever man needs may be had by exchanges. Every individual can select his particular branch, and, so far as soil and climate are concerned, he can pursue more branches than one.

As a general thing let the farmer endeavor to increase the production of the soil. If he can produce "two sheaves of grass where only one grew before," or make double the number of bushels of wheat and corn where only one was made before, he has not labored in vain and is certainly progressive. Why does not the man who begins farming in a small way and gradually increases in his stocks, implements and acres, deserve as much credit and respect as the merchant and the speculator? No one should be proud, haughty or vain-glorious. Every one that is useful and respectable in his vocation should be the peer of any good man.

Just now there seems to be a lull in business everywhere. Many are out of employment—Farmers are not as thrifty as they have been; with some the seasons have been unpropitious and prices unremunerative. It is not to be wondered at if they are disheartened. Let them take courage, redouble their energies, do their work thoroughly, husband their manurial resources, find out the fertilizer suitable to each particular crop, and give to it the needed work. With a good season and no disasters, remuneration is almost certain.

The farmer should be wide-awake, "prove all things, and hold fast to that which is good." In the February number we can see how much agriculture, the various breeds of animals, and agricultural implements, have advanced to perfection. The *Southern Cultivator* says "Brain and method should be applied to everything," and doubtless it is true. Messrs. Editors, I don't

write because I want to see my ideas and notions in print, but to be in some sort an example to others to write something that may perchance excite them to think and write for the benefit of the laborer and husbandman. What calling is more useful, more honorable and more necessary than that of the cultivator of the soil? C.

P. S.—Since my last I have made inquiries with regard to the worth of the board of hands. One gentleman says when he commenced farming he kept account of everything he bought, as he had it all to do, and found the actual cost per diem per individual was 25 cents. I observe that some young men messed together at a cost of \$6.50 monthly, but regular boarders were higher. One to rent a house, buy fuel and provisions, would have to charge higher than whose house was not rented, nor provisions purchased. As I said before, the cost of feeding labor should be known. The merchant knows what his clerks' board as well as wages cost him, and other expenses, and puts a certain per cent. on his merchandise, so as to ensure him a net gain. The farmer should know what the cost of keeping horses, cattle, &c., is: then he would know the profit or loss. Knowing such matters he would be more likely to do a safer business.

Jefferson County, W. Va.

C.

The Fence Question.*Messrs. Editors American Farmer:*

When I first read in the Baltimore daily papers that the Horticultural Society of Maryland had taken in hand the subject of vagrant stock, and that a committee of gentlemen of influence had been appointed to memorialize the Legislature on the subject, for the moment I felt quite elated, and found myself involuntarily imitating old Simeon: "Now testest thou thy servant depart in peace, for now shall we see the regeneration of farming in Maryland;" for on this fence and stock question hang some of the most important issues in modern farming.

But when I took into consideration our legislators, I felt sure of one thing: that they would commit no such act of political lunacy as to favor a bill that would endanger their return to the legislature. The stump orators would lose half their stock in trade, if they could not have a lick at the bloated bond-holders, or the dreadfully oppressed poor man, who is daily ground to the earth by the rich.

I now see that the bill that I fondly hoped would include all the State, is narrowed down to a circle of fifteen miles around the city of Baltimore, and at this time it is doubtful if even that much can be secured. I am fearful, Mr. Editor, that the subject of fences and stock will never be fairly understood, until fencing shall become so high that farmers will either be obliged to give up farming or fencing.

I do not suppose that one in ten has ever counted the cost of fencing a farm of 160 acres, or the loss of land taken up by fences. To fence a farm of 160 acres, divided into 10-acre fields, takes between four and five miles of fence. Four miles make 21,120 feet, or 2,112 panels of fence, 10 feet long each. Where I live, though chestnut is plenty, good rails are worth \$65.00 per 1,000, and posts 8½ feet long 40 cents

in the w.o's. At present, as times are hard, you may get the fence put up for 35 cents per panel; altogether \$1.07½ per panel; and if you have far to haul the rails, it will run it up easily to \$1.12½ per panel, or nearly \$24.00 for the fences. I think that it is not too large an estimate to put the loss of land at six feet on each side of the fence; a loss on the whole farm of about six acres of land; and on most of our farms these fence-rows are the seed-beds for all sorts of weeds. If these fences were a *permanency* we would only have to count the interest on the first outlay, but my experience is that the posts do not last on an average over 12 years, and probably the whole will have to be renewed in 16½ years, which would be equal in all to 12 per cent. on the first cost, besides the loss of six acres of land. It may be asked: how are we to go without fences? Until a higher mode of farming is adopted, we cannot farm without an outside fence; but doing away with the inside fences will be a considerable saving of expense, and a long stride towards a better state of farming. In your next number, I will try to show the economy of keeping horses and cattle up: as the only use of fences is to allow of pasturing the land.

S. N.
Harford Co., Md.

Trenching Fodder.

Messrs. Editors American Farmer:

The well-established experience of Mr. Goffart has opened to the tiller of the soil another source of profit: The *modus operandi* of Mr. Goffart has been known for more than a quarter of a century,—as we ourselves have practiced it as early as 1850. Necessity compelled us to contrive some means by which to preserve a large quantity of hay cut, but which could not be sufficiently cured on account of rainy weather. We dug trenches, in sandy soil, packed the hay with alternate layers of straw and some salt, tramped it as *hard* and *even* as possible, and covered it with earth: the trenches appearing after having been finished like banks of potatoes. When opened for use we found on those places where air had had access, mildew; where not, the hay was sound—that is, it was in such a state that our dairy cows ate it with relish, not leaving a blade.

Altogether our experiment was satisfactory, but then you know how we farmers in general feel about adopting anything new. Then we considered the old way of curing hay good enough for us, although we could not deny that the soured hay had been eaten with more relish by our cows, and had—*produced more milk!* But we did not care to take the trouble. And since then we have not been compelled by necessity to repeat the experiment, living in a climate where we cut our grass before dinner, cure it after dinner, and stack it by sundown.

We also never have more roots on hand than our stock will consume the leaves when gathered. This is also occasioned by our warm climate. We leave our roots in the field during the whole winter, and pull as many daily as we need: thus not getting an oversupply of leaves.

Meanwhile, for such sections of the country where stock has to be stabled and fed for five to seven months, our farmers should give trenching a fair trial.

L. A. HANSEN, of Miss.

Gunpowder Farmers' Club.

Messrs. Editors American Farmer:

The last meeting of the Gunpowder Agricultural Club was held February 5th, 1876, at the residence of N. R. Miles; S. M. Price, foreman. Owing to a chilling southeast wind which prevailed at the time, inspection was brief.

After the usual reading of minutes and transaction of necessary business, the half hour for questions and answers being next on the programme, John D. Matthews asked whether he is right in putting his hen manure into the barnyard, as witnessed by and explained to the Club, on the occasion of their last visit to his farm. It is not his intention to let the manure lie long, and thinks this plan will secure a more even distribution; it is an experiment.

D. Gorsuch does not approve of that plan; the heat of the manure will certainly drive off the ammonia. If he pursued Mr. M.'s plan, he would use plenty of dry earth and plaster. Question—Will not cattle in tramping and lying on manure prevent the loss of ammonia? Answer—Yes, but in opening to remove there would be a loss. J. D. M.—He uses plaster to arrest that loss. Ed. H. Matthews stated that in getting the manure out the hen manure falls through, and in this way is wasted. Ed. Scott—Double the benefit would be derived by keeping the hen manure dry and using it in the spring with earth and plaster. A. C. Scott has tried it in this way and found it equal to some kinds of commercial fertilizer. D. Gorsuch said he had tried it in that way, but found it far inferior to Whitelock's Vegetator and Turner's "Excelsior," adjacent to which it was applied. In fact, he saw but little benefit from it. I. M. Price thinks it must be attended with serious loss of the ammonia contained in the hen manure to compost it with barn-yard manure in a state of actual fermentation.

The half hour having transpired, annual crop reports were next in order. The following are extracts:

D. Gorsuch—Timothy and clover, 108 acres; yield, 105 tons; second crop, 8½ tons. Total, 113½ tons. Wheat crop, variety, Fultz; 12½ acres; yield, 330 bushels; average, 25 9 10 bushels. Of the above, 7 acres (rye stubble) had a top-dressing of compost and 150 lbs. "Whitelock" drilled in. Of the balance, (5½ acres sod) part was top-dressed with compost and part was treated to various commercial fertilizers,—Whitelock proving best, both in producing a heavier yield of grain and in leaving an excellent set of grass.—Rye: 23½ acres; 758 dozens (not threshed.) Potatoes: 1½ acres; yield, 100½ bushels. Corn: 31 acres; yield, 343 barrels; average, 11 1-15 barrels per acre. Manure: 355 five-horse-loads. Apples: one-third of a crop.

In regard to the subsoiling for corn, beneficial results were apparent at gathering time; besides, during the season, the subsoiled portion worked up much lighter.

John D. Matthews—Wheat: first lot, 13 acres; average yield, 20 bushels per acre, Fultz variety; second lot, 15 acres; corn land; where no "Vegetator" was applied, wheat was not worth cutting; whole crop, 319 bushels. Oats: 5 acres; average per acre, 32 3 5 bushels. Hay: 68 acres; yield, 68 tons. Corn: 25 acres; old sod; yield, 375 bar-

rels; average per acre, 15 barrels; Whitelock's Vegetator used on part at the rate of 150 lbs. per acre,—hen manure on part.

N. R. Miles not prepared to report.

S. M. Price—Wheat: 34 acres; $5\frac{1}{2}$ acres Fultz, drilled with Whitelock's "Vegetator;" 200 lbs. per acre averaged 26 bushels; $11\frac{1}{2}$ acres Mediterranean drilled in with 200 lbs. "Vegetator." At the same time and in the same field with same amount of "Vegetator" per acre, 6 bushels were put in with three-horse cultivator, which, compared with the drilled, produced in the proportion of one-half; 17 acres corn ground, part put in with the drill, part with the double shovel—former yielding much better than latter; total yield, 504 bushels; average per acre, 15 bushels. Rye: sowed $19\frac{1}{2}$ bushels; fine growth of straw, and well filled; much improved by use of the "Vegetator;" not threshed. Oats: 22 acres; not all threshed. Potatoes: a small plot for early use, and another $9\frac{1}{2}$ acres; yield, 25 bushels. In reference to this last lot Mr. P. stated that he thinks potatoes can be raised better without manure than with it. In looking over his meadow about the 1st July, he noticed a spot run up with plantain; plowed it 4 to 5 inches deep, using subsoiler, and planted in potatoes; grew off weakly; ground dry. The seed used was not bigger than hickory nuts, the refuse of his crop, and a mixture of varieties. They turned out to be as fine as he ever raised. Several members thought the fine yield attributable to opportune rains. Hay: 85 acres; yield, 85 tons. Corn: 15 acres on meadow sod gave an average yield of 18 barrels; total area in corn, 36 acres; yield, 540 barrels; average per acre, 15 barrels.

I. M. Price—Wheat: 205 bushels; average $10\frac{1}{2}$ bushels; Whitelock's "Vegetator" was applied at the rate of 200 lbs per acre. Oats: sowed 6 bushels; yield, $85\frac{1}{2}$ bushels; no phosphate. From 12 acres, cut 28 tons 19 cwt. timothy, clover about 15 tons. Potatoes: planted 5 bushels Early Rose; yield, 30; of Peach Blow, 5 bushels planted in the same manner; yield, 17 bushels. Corn: 10 acres plowed in the fall and manured in the winter with horse-stable manure; yield, 140 barrels; also, 1 acre treated as the rest; yield, 19 barrels 1 bushel; average yield per acre, $14\frac{1}{2}$ barrels.

W. W. Matthews—Wheat: 45 acres; mostly Mediterranean; yield, 550 bushels; average, $12\frac{1}{2}$ bushels; stable manure applied during the winter, with no perceptible benefit. Hay: 65 acres; yield, 65 tons. Corn: 45 acres; yield, 540 barrels; average, 12 barrels; but little manure of any kind used. Oats: 4 acres; yield, 120 bushels; average, 30 bushels. Potatoes a failure on account of the bugs.

Jos. Bosley—Wheat crop: from 40 acres there will be from 600 to 650 bushels. Rye: 7 to 8 acres; yield, 100 bushels. Oats: from 16 acres, 450 to 500 bushels. Hay: supposes to be 60 tons, from same number of acres. Corn: from prize lot (5 acres,) 127 barrels $8\frac{1}{2}$ bushels; from field of $37\frac{1}{2}$ acres, 577 barrels: average per acre, 164 barrels. Potatoes: 100 bushels on less than an acre.

T. T. Gorsuch not prepared.

A. C. Scott—Hay: 19 tons from 26 acres clover and timothy mixed. Rye: 5 acres, 58 bushels. Wheat: 18 acres; badly winter-killed; yield, 150;

sown broadcast. Corn: 26 acres; yield, 295 barrels; average, $11\frac{1}{2}$ barrels. Oats: 11 acres; yield, 375 bushels; average, $34\frac{1}{2}$ bushels.

Ed. Scott—Wheat: first 6 acres; oat stubble covered with barn-yard manure, plowed under; wheat drilled in last of September; no chemical fertilizer used; yield by weight averaged 39 bushels per acre—variety, Fultz. Next 9 acres, wheat stubble; drilled middle September, with 200 lbs. Whitelock's "Vegetator" per acre; no manure; average yield, $18\frac{1}{2}$ bushels per acre; same variety as first lot. Next, about 5 acres, corn stubble put in with the drag; average yield per acre, 14 2-5 bushels, mostly amber; no fertilizer or manure used. Whole crop, 20 acres; 456 bushels; average per acre, 22 4-5 bushels. Rye: about 5 acres, mostly corn stubble; yield, $115\frac{1}{2}$ bushels; average, 23 bushels per acre; straw, about $4\frac{1}{2}$ tons. Oats: 6 acres corn stubble drilled in with 2 bushels seed per acre; average per acre, 37 5-6 bushels. Clover seed: $8\frac{1}{2}$ bushels on 4 acres. Potatoes: 75 bushels on nearly an acre—Early Rose; Whitelock's "Vegetator" used in the hill; had a hard fight with the bugs. Hay crop: 70 to 75 tons from 50 acres; average, $1\frac{1}{2}$ tons per acre. Corn crop: 22 acres yield 346 barrels; average per acre, 15 3-11 barrels. Apples: a poor crop; had plenty for home use, and made 10 barrels cider.

From the above given reports it appears that the average of corn per acre is a fraction less than 14 barrels. Reports to be received will scarcely maintain this high state, though it will not probably sink below 124.

Club adjourned to meet March 4th, at the residence of S. M. Price. T. G.

Baltimore Co., Md., Feb. 21, 1876.

Routine and Progressive Farmers—Use of Fertilizers.

Messrs. Editors American Farmer:

We are often asked by self-conceited farmers, what advantage clubs, unions, granges or agricultural papers are to farmers; they tell you if men would farm as well as they know how, they would do well. How is it with them? They will say, on'y give them plenty of lime and manure and they can do without the experience of others.

This class of farmers have much to learn before they will ascertain how little they know. Why do they not have plenty of lime, manure, &c? Why are they so far behind their neighbors in the march of progress or improvement? As a general rule we find this class of farmers plodding on in the ruts which have been deepening for them since the days of their grandfathers. They will tell you that their father made a living and raised his children without the aid of clubs, granges or agricultural papers. They see no use in spending time or money in draining their land, for "father" got along very well without. They can see no use in ploughing so deep, for "father" ploughed only 2 or 4 inches, and if I only get along as well as he did I will be satisfied. They are not profiting by the experience of others, and making no advance from their own. Now, Messrs. Editors, it is a matter of congratulation to know that clubs, granges and the press are so rapidly lifting this

class of men out of the ruts and classing them among progressive farmers. How many sons and daughters must be grateful to the *American Farmer* for the success of their fathers in their vocation?

I have been highly gratified to learn, through the *Farmer*, of the satisfactory results from the experiments in high farming reported by clubs and individuals. Such reports are truly encouraging, and, taken in connection with observation, cannot fail to convince the most sceptical that those who practice what is termed high farming, in giving a liberal supply of plant food to our crops, obtain the most satisfactory and remunerative returns. In the spring of 1874 I planted a field in corn, from which I gathered 14 barrels of corn per acre. In the spring of 1875 I planted the same land in corn, after applying 400 lbs. of Sea Island guano (manufactured by R. W. L. Rasin & Co.) per acre. I have gathered therefrom about 16 barrels per acre. I do not mention this as a very large crop of corn, but to me as a second crop in succession most satisfactory, and I am well assured that even a more liberal application would have given equally satisfactory results. I feel constrained to say that the use of Sea Island guano as a fertilizer has, to me, been very satisfactory. If our farmers would be more liberal in the quantity of manipulated fertilizers they apply to their lands there would be less complaint of failure. S. M. RANKIN.

Belle Vale, Baltimore Co., Md., Feb. 22, '76.

The Agricultural College.

To the Editors of the *American Farmer*:

Why don't you start a subscription list to buy a little Paris green for the Maryland Nautical-Agricultural College, to save their potato crop next summer? Perhaps they might take it if somebody would invent a machine that would apply it without any labor on their part. But the Agricultural College is not the only collegiate excrescence that manages a sort of dead-alive existence in this State on the public funds. There are other educational institutions which ought to be left to their own resources for all the good the people derive from the money spent on them.

If the money paid to these institutions was given to a thorough and complete experimental garden, some good might accrue to the public. The agricultural interests of the State would be better served by a properly conducted experimental farm, amply supported, than by a half-dozen so-called Agricultural Colleges. Such an establishment in proper hands could distribute information to Maryland farmers annually which would make the taxes for its support a paying investment.

I hope the proposed law against vagrant cattle will pass the Legislature and ultimately extend all over the State. Abolish unnecessary fees and donations to supernumerary college almshouses, and make all the real estate of the State pay its proper portion of the taxes, and times will brighten very perceptibly.

AN EASTERN SHOREMAN.

The Waste of Timber.

Editors *American Farmer*:

It is singular that, notwithstanding all that has been and is constantly being said on the subject, so little attention is paid to forestry. It seems almost an impossibility to say anything that has not already been brought before your readers in various ways, and yet when we see such indiscriminate destruction of our grand, and what in a few years will be well-nigh invaluable timber, we can hardly refrain from saying a few words on the subject, in the hope that it may possibly arrest the attention of perhaps some of your readers. We do not offer advice; there is sufficient in the world already. We really think the world, *i. e.* the human part of it, ought to be better than it is with such a superabundance of so valuable a commodity lying around loose in every direction. We have never been able to assign any satisfactory reason why any one would take an axe and chop down a fine young hickory or oak with a straight clear leader when one that was overgrown, or without a leader would have answered the same purpose. Nor can we understand how a gentleman owning a fine estate with a valuable range of woodland can permit laborers to cut for every trivial purpose the clearest, straightest saplings, which they almost invariably will do if allowed, when a little care and knowledge could have selected such as required to be taken down, leaving such as would increase in value and giving them more space in which to grow. It seems never to occur to such proprietors that unnecessarily cutting down a promising young tree of several years' growth is tantamount to throwing greenbacks in the fire. There are some, however, who do not see the difference in the loss sustained.

It looks strange at the first thought that landed proprietors never so much as give a thought to the subject of forestry, although shrewd business men note the increasing value of many kinds of American timber. This matter will force itself upon our country at some time; in the meanwhile it is as well to admit that in road-making and forestry we have nothing to boast.

F.

Virginia for Immigrants.

BUCKEYELAND, NEAR CHARLOTTESVILLE, VA.,
January, 1876.

Dear Sirs: Yours of the 27th of December 1875, has been received, asking information about the lands and people around Charlottesville, Virginia. Albemarle is a grand old county. Before our unfortunate war, her people were as intelligent and prosperous and happy as any on the American Continent, and here all who would could be happy and prosperous; her institutions of learning were unequalled; her soil generously productive; her water pure and refreshing; her climate genial and invigorating; her people intelligent, warm-hearted and generous.

During the war her citizens, believing they were right, freely staked their last dime, and nobly pitied their last man. The war closed upon us by crushing out all but our honor, generous feeling, and dear old homesteads, to which we, perhaps, too long and too weakly cling with

filial affection, until our people have become poor indeed, and now necessity, stern and heartless, coldly and firmly bids us doff our warm attachments and sever the last link which so tenderly bound us to the endeared homes of our grand-sires' sportive, happy childhood days, and, like Virginians, arouse ourselves to a calm reflection as to the forlorn condition of our dear old State; and, as Virginians, resolve we will unitedly do all and everything we can to reinstate Virginia as she once was: the leading sister of gallant old thirteen, who, united, so successfully gained what we divided so completely lost.

Now, for the more quickly and effectually accomplishing this, we must resolve to divide out our large domains, and, if needs be, to part with all and quietly retire into humbler cabins and enjoy the unalloyed pleasure of seeing and generously helping to make Virginia far greater than she has ever been. To do this, as times and circumstances now are, it is absolutely necessary we should at once lop off, sell out and thicken up with the good and the great, whom we all are now ready and anxious to give a heart's warm, patriotic welcome,—come from whence they may.

Then wake up at once and come along quickly with your money, and your manly resolves. Your money will cheer us, and our renewed efforts will cheer you onward. Your money and our combined efforts can and would soon make this the garden-spot of all America; and then, too, we all will be Virginians, and, like a well-united band of patriotic brothers, we will then exult in our sweet, prospering and happy homes. Then, too, you will have more than paid for your lands from its fertile soil, and its cash value will have been enhanced from four to ten times its cost. Then how the procrastinating sluggard will sadly and sorrowing deeply regret he, too, had not more wisely secured one of their sweet homes for his own dear ones when he will have to look out homes for them in far less favored climes, or unwillingly remain in his own native ice-bound region, whereof, in yours, you seem so justly to complain. To know and fully appreciate our country and people, you must come and see for yourselves, though of us and our country just now you can form no just conception, for we are too poor to do justice to our lands; but a sojourn here, upon my plan, will enable you to know both us and our lands and climate too, ere you will be compelled to close the trade, by which you will be free to select, whether you will buy or roam still further in quest of a better home, which I, after a ramble over seventeen of the States, had decided I could not find anywhere. Come and give us and our lands a fair trial, and I think you and your grandchildren will say to all others, as I now say to you and yours: "As to me and mine, old Albemarle county of Virginia is good enough for us."

After the most thoughtful reflection I have been able to give this very important subject, I am well convinced it would be best for the buyer, the seller and our country, if something like this plan could be adopted: the buyer to loan to the seller one-half the assessed value of the land at six per cent. interest, secured on the land by a deed in trust, and he to take possession of and work the land judiciously as his own for five

years, upon a rent of one-fourth of crops made, and at the expiration of the five years, to have the right or choice of either taking the land or demand a return of his money, for which prompt return the land should be bound. This would enable the buyer to well know what he could do with the land; how the water and climate would agree with him and his family, and whether they would so like the people and country as to be willing to make it their permanent home.—If not he would then be free to look out elsewhere, which would be a very desirable advantage, should he not like, and a plan of this kind would doubly ensure their becoming attached to our country and people, because the seller would more cautiously give a correct account of the productiveness of the soil, and feel a deeper interest in honestly advising for the best, and protecting him from the sharpeners now too frequently found everywhere. Thus the two families would become more intimate and familiar, and would insure the strangers a more sociable introduction to the neighbors.

In five years of this familiar intercourse, and an occasional intermarriage, they could, nine out of ten times, come to know and love our glorious country and warm-hearted people as their own; and the buyer, being free from the fear of one of the most unpleasant set-fasts—a home to sell, and not a purchaser to be found anywhere; and the seller, being relieved of his pressing debts, and the distribution of the money amongst our people, would, like a charming magic, clear the minds, soften the feelings, cheer the desponding, strengthen the nervous, and redouble the energies of all; that our whole country would take the high position God and Nature designed it should, and fast become the most desirable, sweet and happy homes of the best contented and most prosperous people on the American continent. I have thus written of Albemarle county, of which Charlottesville is our county seat, and I know the lands are good, the water pure, and the people as good, warm-hearted and generous, as can be found anywhere. I have not answered the questions about the lands around Lynchburg, Va., because I do not know them: I believe them good, and their people equal to any to be found. Come and see, and decide for yourselves. Only take time, and all can find a home in old Virginia somewhere just suited to his mind. With best wishes for us all, I am, very truly, yours respectfully, GEO. C. GILMER.

Messrs. W. J. McNeill and others, Canada;

and others from Connecticut, Maine and Ohio:

P. S.—I send this to the *American Farmer* because I know the Messrs. Sands & Son are ever warmly alive to any and every thing which may add to the interest of our whole country, and all others, who may think this can be of any service, will at least confer a favor on all such, and will receive their thanks, which, with many of us just now, is all we have to give. G. C. G.

THE LARGEST RECORD YIELD of a single cow that is perfectly reliable and well authenticated, is that of an animal kept in the jail at Lewes, England. In eight consecutive years she gave 9,720 gallons, or an average of more than 1,210 gallons a year. She was milked, one year, 328 days, and gave 1,230 gallons.

Live Stock.

Black Leg in Cattle.

Messrs. Editors American Farmer:

Permit me to give you the views of a practical and observant farmer, (Ma.) Jno. T. Byrd, of Williamsville, Highland co., Va., on this subject, derived from his own observation for a number of years, corroborated by the experience of his aged neighbor, Samuel Clarke, of the adjoining county, of Baltimore. This gentleman, besides having a reputation of a self-made doctor and nurse, when *bipeds* require his services, is perfectly *au fait* in the discharge of certain special duties, once a year, among quadrupeds, known as gelding and spaying, and something also of a veterinary surgeon.

Major Byrd having written out his views hastily, left them with me for revision, to be sent to you at my earliest convenience. If I fail to report him correctly, it will be because, in his haste, he has failed to make them as clear as he would have done had he given them more consideration. K.

Gentlemen:—Having suffered oftentimes in the loss of calves, and sometimes yearlings, with what is usually denominated "black leg," has caused me to give the subject close attention. I have frequently attended to opening the animal, and having a careful examination made of the stomach and other parts, and have come to the conclusion that death ensues from the same cause that produces what is usually known as *dry murrain*. In the many folds or apartments of the stomach, there will be found a collection of dry food, so *hard* and dry as to become woody in its character, and, of course, indigestible. Inflammation sets in; a torpid and inactive condition of the animal ensues; the blood stagnates; and, after death, either in the fore or hind legs, sometimes one of each, black blood, and a puffy and dark condition of the flesh, is found next the skin, with a mortification setting in. My idea is this, that late in the fall, or early in the spring, when the top of the grass, killed by the frost, is carried to the stomach, it tends to clog and harden,—producing the effects indicated.

My old friend, Dr. Samuel Clarke, who has often been called on by myself and others, concurs fully in this idea. He informed me, that an animal (a dry cow) selected for a beef, grazed all summer on good grass, and fed on corn in the fall, continued poor, was killed by the owner, and a careful examination made of her stomach, when a quantity of this dry woody material was found, which he supposed might have been there for years, and the cause of the animal's unthrifty condition; as in calves it is the cause of black leg, so called. We both think the disease is not caused by turning in on too luxuriant pasture, and fattening rapidly; or, as some think, when fat, being put on lean pasture, and falling off rapidly. Dr. Clarke does not attribute the disease to either of these causes, but to the first named. To avoid it, he turns on the best grass, salts at least twice a week, feeds some potatoes or turnips. Dr. C. regards a small quantity of flax seed, fed in a little bran, twice a week, as a preventive; and it is well to observe that it cor-

rects a disposition to scour, when turned on such grass. Hoping these views may cause others to investigate the subject, and through your valuable paper give the public the benefit of the information obtained, I submit them with diffidence.

Respectfully yours, " "

JOHN T. BYRD.

"Hog Cholera."

The author of the communication given below is an intelligent farmer, and also an educated physician. We give space to it with much pleasure, and those of our readers in possession of facts which will help to elucidate the origin, cause and spread of this fatal disease, and to reach a preventive of its ravages, will be doing an essential service to the public by communicating answers to the interrogatories propounded.

To the Editors of the American Farmer:

Up to the present time the writer has had no opportunity of investigating the symptoms and nature of the disease, although deaths ascribed to "Hog Cholera" have occurred in this vicinity.

Farmers (and the same remark applies to diseases of the human family) are too apt to look *more closely after remedies* for the cure of the diseases of their animals than to study closely the hygienic conditions essential to their well-being and thrift. While this applies to all animals, climates and conditions of normal life, it especially applies to both epidemics and endemics of a dangerous character.

The hog has been generally regarded as the most hardy, healthy, and requiring the least protection from the inclemencies of the seasons of any of our domestic animals, and in many sections and climates where nature furnishes food the year round, requires only extra feed for a short time in the fall months from the farmer's store of grain to prepare his body for the meat-house. This sudden disease called "cholera," from its name would indicate that from some influence exercising a derangement of the markedly strong *digestive* and *assimilating* power inherent in the hog, a disease fatal in character is induced.

The following series of questions addressed to certain gentlemen, who have, for the past two years, lost their hogs, with many fatal cases in this vicinity, may serve to indicate the direction our thoughts should take in studying this disease:

1. What circumstances in your opinion as to age of the hogs, breed, whether natives or thoroughbred, crossed or bred in, exert a predisposing influence to the disease?

2. Which are the more likely to be attacked: pasture hogs, or those running at large in the woods and highways? And how far does regular feeding and keeping in good condition influence the affection?

3. State briefly the symptoms of the attack, progress toward recovery or fatal termination, and the average duration of the disease?

4. Are the hogs dying in your vicinity affected with "cholera," as medical men understand the word as applied to diseases affecting the stomach and intestines?

5. How far, in your opinion, can the disease be attributed to epidemic influences beyond our control? How far to local causes or encephalic, susceptible of being remedied by proper hygienic or prophylactic measures?

6. State any instances bearing on the cause of the disease where the absence or excess of salt with the feed, kind of feed obtained from the field, enclosures, woods, or food given, which has exercised an influence, beneficial or otherwise.

7. State the remedies usually given, with results, and the percentage of mortality in those attacked; and lastly, any other information on the subject of the treatment of the disease deemed important.

The above questions you perceive cover the whole ground, and the writer is impressed with the grave importance of studying this disease especially with reference to the preventive measures to be adapted "for saving our bacon." It may not be improper to observe that the past two years, not only in our States, but in England and on the continent, have been prolific in epidemic diseases,—some of a mild, others of fatal character attacking horses and horned stock. While the catarrh or epizootic affection attacking our horses was comparatively mild, the "lung plague" (pleuro-pneumonia of cattle) has been terribly fatal in England and in our own country.

The writer thinks this subject of "Hog Cholera" demands the same careful diagnosis of the nature of the disease as was made by the medical commission appointed by the Surgeon General at Washington, to examine animals dying with Texas cattle fever. We want all the facts as indicated in the above questions, and an accurate knowledge of the pathology of the disease. The appearance of the organs in the dead animal will on dissection give us something more certain than we have at present.

Every hog that dies now has "hog cholera" among our people, and a gentleman recently assured me that after losing for two consecutive years most of his hogs by "cholera," he was afraid to buy any more breeding stock. To my inquiry as to how they were affected, I receive the response "don't know; found them dead, before I knew they were sick." On examining a sick pig recently, supposed to be a case of cholera, it was found to have "thumps;" hypertrophy, or enlargement of the heart, which could be seen beating with such force as to shake the animal as he stood. G. W. B.

The Use of Salt in Agriculture.

Some of the best farmers of England, use salt very regularly on their lands, and have great faith in its efficacy upon the soil,—applying two or more bushels to the acre. In this country, it is not as equally prized for this purpose; but as to its great value and necessity for stock, there is no difference of opinion. The agricultural editor of the *N. Y. Times* gives the following directions as to the mode of giving it to stock:

Salt is one of the most abundant substances existing in nature, being found everywhere, in all soils, from which it is being continually

washed by the rains into the streams. By these it is conveyed into the ocean, where it is constantly accumulating. That it is thus abstracted from the land is proved by the saltness of every lake which has no outlet, as our own Great Salt Lake and others similarly without an outflow. When taken into the stomach of an animal in large quantities it irritates the mucous membranes of the intestines, producing fatal inflammation and disorganization. In small quantities it facilitates decomposition, but in large quantities it is an antiseptic and preservative of both vegetable and animal substances. It is therefore an aid to digestion when given in proper quantities, and assists the stomach and intestines in their operations.

To determine the quantity needed for the different domestic animals, numerous careful experiments have been made. Recognizing the importance of the subject, the French Government, not many years ago, commissioned a number of practical and scientific persons to investigate and report upon it. In their report the following scale was fixed as the minimum daily allowances for the different animals in ordinary condition, viz:

	Ounces.
For a working ox or milch cow.....	3
For fattening stall-fed oxen.....	3½ to 4½
For fattening pigs.....	1 to 2
For store sheep (double for fat sheep).....	½ to ¾
For horses and mules.....	1

A German dairyman found, after many trials, that with two ounces of salt daily his cows gave the most milk. The careful chemist and farmer, Boussingault, once fed six steers for thirteen months in two lots, giving the same kind of fodder and water to each, but giving one lot one ounce and an eighth daily, and to the other none. A remarkable difference was at once manifest. The first lot were all sleek, smooth-coated, and in perfect condition; the other became rough, mangy, and ill-conditioned, and each weighed at the end of the test 140 pounds less than those that had been supplied with salt. Many other similar results might be cited, but these are sufficient to induce those who still doubt the value of salt for all kinds of farm stock to test the matter for themselves.

Not only is salt an agreeable and needful article of food, but it is in some diseases almost a specific remedy. For those parasitic diseases to which sheep are very subject, such as the liver rot, (flukes in the liver,) verminous bronchitis, (worms in the bronchial tubes,) and worms in the stomach and intestines, salt is an unfailing remedy, as well as an effectual preventive. The irritating worms which sometimes infest the rectum of the horse are removed at once by an injection of a solution of one ounce of salt in a quart of water. But it is as a constant addition to the food that it is most useful as a preservative of the health of our domestic animals.

THUS TALKS an old farmer about his boys: From sixteen to twenty, they knew more than I did; at twenty-five, they knew as much; at thirty, they were willing to hear what I had to say; at thirty-five, they asked my advice; and I think when they get to forty they will acknowledge that the old man does know something.

Poultry Yard.

Improve Your Fowls.

Editors American Farmer:

Is it not strange that we will continue to raise the common small fowl, when it costs no more to keep the more improved breeds, such as Brahmas, Cochins, &c? Most especially when we raise them for market should we keep the larger breeds. One Brahma will weigh almost four times as much as a common hen. A neighbor of mine killed his turkeys—also a lot of his Brahmas. They were put in the same box, and sent to market. His commission merchant thought they were all turkeys, and sold them for eighteen cents per pound; the smallest Brahma weighing eight pounds. This breed of fowls mature more rapidly than any other. They are large enough to fry before the common chicken begins to feather. It may be said that we are not able to pay the prices that are asked for pure breeds; but we can say, with more truth, that we cannot afford to give our time and attention to any but the best. We live in an age when we must make four blades of grass grow where there was only one, if we would be prosperous, and this is not less applicable to raising fowls. Can any but the wealthy afford to raise four hens that will bring, when sent to market, no more than one? I confess, I was somewhat prejudiced against the fowl, having heard that they were not healthy, and that their meat was coarse. I have found this not true, having tried a great many breeds. I can say with truth, I think the Brahma the healthiest fowl I ever raised, and their meat unsurpassed by any. There never was a time that we farmers could less afford to raise inferior stock, of any kind, than now. Breed your mares to the very best horse or jack you can; your cows to the best bull; sows to the best boar; and last, but not least, your sheep to the best ram; cultivate less land, and make it produce more; raise better stock, and you will cease to hear, "That farming does not pay."

Spottsylvania Co., Va.

Z. C. DANIEL.

Dominique Games.

An amateur gives the *Iowa Agriculturist* the following statement of the laying qualities of this breed of fowls. The date of the communication is June 2, 1875. It gives a record worth looking at:

"I have the Dominique Games this year, and herewith give you my experience as an amateur.

"I obtained nine hens and a stag from Judge Grant, in the fall, and kept them in a close coop, —as a necessity and not from choice,—all winter, and fed them on corn and scraps from the table and kitchen until late in April, when I commenced to feed them wheat, they being at the time very fat. About the 3d of March they commenced to lay, and up to the 26th of March had laid 153 eggs,—being 17 eggs a-piece, in 23 days, for the 9 hens, when two of them desired to sit. I supplied them with 15 eggs each, and they came off with a brood of 26 little ones, 23 of which are now hale and hearty.

"After the 26th of March, the other 7 hens laid every day until May 1st, when another commenced to sit. I supplied her with 15 eggs, and she now has a brood of 15, as pretty as can be found. I then got 5 eggs a day until May 12th, when another commenced to sit. I then got 5 a day until day before yesterday, when the 5th commenced to sit. I got 4 eggs yesterday and the day before, and hope the number will not decrease, as I intend to sit no more this season.

"Thus I have 565 eggs in 88 days, averaging as follows:

9 hens,	- - -	23 days,	- - -	153 eggs.
7 "	- - -	36 "	- - -	245 "
6 "	- - -	12 "	- - -	72 "
5 "	- - -	19 "	- - -	95 "
Total	- - -	88	- - -	565 eggs.

Being an average of a little over 6 hens laying 83 eggs a-piece in 88 consecutive days. The eggs are of a fine size—averaging at least two ounces. The last 15 I set weighed exactly two pounds.

"I have fed the fowls almost exclusively on wheat since the latter part of April, and they have plenty of range, with little or no green food."

The Apiary.

Feeding Bees in the Spring.

In a communication to the *Bee World*, for January, D. Staples, of Columbia, Tenn., gives the following instructions upon this point, in connection with stimulating queens to greater activity, and the bees to the building of new combs. He says it is known by all good apiarians that when honey is coming into the hive regularly the queen is stimulated to lay a vast amount more eggs than when there is no honey coming in, although there may be an abundance of sealed honey in the hive. Hence the philosophy of feeding a little honey every day in early spring; also, if your bees are destitute of a sufficiency of bee-bread, you can feed a little rye flour or corn meal, put in the sunshine and out of the way of the wind, with a good effect, in order to have a strong stock of workers on hand on the early appearance of the harvest, that they may wade in and take of the first fruits of the land; and should the harvest linger you need not fear the laborers will tire, for when there is work to do the little busy bee is always ready.

If you wish your bees to use your feed for the purpose of raising bees or the building of new combs, you will need to dilute your honey or syrup with water, but not so much that it will not be sufficiently sweet for the bees to partake of it freely; and in order that they may not store it in the combs it will be necessary to acidify it a little by using acetic acid, cider vinegar, or lemon juice, for the bees very well know that if they store such in their combs it will be an injury, therefore they will not do it; but being avaricious little fellows they will eat of it and feed it to their young until all become fat with a secretion of wax, when, if you place an empty frame in the centre of the brood-nest, you will be surprised with what rapidity it will be filled with new combs.

If you wish nice white combs, you must use white sugar or honey; or you may color your feed yellow, red or blue, and the combs will partake of the color of your feed.

As there are many kinds of feeders in use, I will now describe only one: as I may tread on some one's corns. The one I use is one of my own getting up; and I do not know that there is a patent on it. I make a regular frame to suit my hive, (I use the close-fitting top,) and, instead of putting the bevel comb-guide close to the top, I put it two inches below, then tack a piece of close domestic on one side of the top, then pass it under the bevel piece and tack it to the other side of the top: thus making a trough. I then bore a hole through which I can pass my feed. I then make a trough by plowing a groove in a piece of wood one inch square and fasten it three-eighths of an inch below, in order to catch any drippings that might otherwise fall on the bottom board.

The Dairy.

Management of Dairy Cows.

A Mr. White, who is represented as a very successful dairyman, at a Dairyman's Convention at the West, gave the following as his mode of management of his business:

He has his cows come in about 1st of April, and dries them off about close of the year: preferring to have them dry nearly or quite three months. Before they come in he begins feeding them corn and oats with hay. When they are turned on grass he feeds wheat shorts. Bran is now usually ground he does not think very valuable. Rye makes fine feed. He feeds at regular hours and milks in the same way, having cows milked in regular order and by same persons. The cows are always treated kindly—as Mr. W. once said, "I treat a cow as if she were a lady." When pastures begin to fail, he feeds to keep up the flow of milk: it being a great mistake to let it fall off. He plants corn thickly one way and commences using this as soon as the pastures fail. He husks none, feeding in Winter from the shock. He so feeds as to have his cows fit for the butcher when ready to dry off, and does sell those found undesirable in this way. When he wishes to dry them off he stops feeding grain and gives only slough hay, when they soon dry off. While dry he uses little grain. He believes he can make 600 pounds of cheese per season from a cow well fed, as easily as 400 pounds from one not well fed. This represents a difference of about \$20 in receipts. He also holds that a cow going into Winter in good flesh is worth \$10 more than if she were poor. The bringing of valuable manure on the farm in the purchased feed is also an important point.

He likes the plan of raising his own calves. A calf may be so treated that it will be a poor cow, or, generally, a good cow. There is much in the feeding and care given. He believes he can start with a lot of cows such as he can generally buy, and with another lot of calves, and at the end of ten years the latter will have given as large a product as the former: that is, that the calves raised by him would give

as large a product in eight years as the purchased ones in ten years. His own cows are about half-blood Short-horns. He is now using an Ayrshire bull, and the calves are very promising.

His cow barn is 114 feet long, 38 feet wide, with 20-foot posts. It is boarded and battened, and ceiled on the inside. Water never freezes in it when the cows are in. It accommodates 70 cows, 85 in each of two rows, giving 8 feet 4 inches for each cow. Stanchions are used. The barn is divided into three divisions lengthwise, each a little over 12 feet wide. In the centre is a feeding floor, also used when drawing in hay. The platforms on which the cows stand are 4 feet 8 inches wide; back of these are the drops, three inches deep and 16 inches wide, made water-tight. Back of these there are spaces of about six feet next the sides: thus giving abundance of room for passing and also room for a wagon. The upper part of the barn is used for storing hay. There are three ventilators, and six windows on each side.

There are large doors at each end of the stable parts as well as of the central part. In the morning, when the cows are turned out, the pigs come in to pick up the undigested grains of corn passed by the cows, and thus the droppings are thoroughly stirred. A wagon is then driven in and the droppings thrown in, and, as a rule, at once taken to the field. At each end of the barn the yards are boarded for thirty or forty feet. The yards are well protected by high fences, and are kept well supplied with straw or slough hay.

The Dairy Industry at the Centennial.

Mr. John Wilkinson, of Baltimore, who has been appointed superintendent of the Agricultural building at the Exposition, informs us in view of the vastness of the dairy interest, the Centennial Commission have decided that it cannot be properly represented and intelligibly displayed at the International Exhibition without its hearty co-operation, with both the manufacturers of dairy products and dairy implements.

The design of the Committee is to equip one section of the structure with the best dairy implements and apparatus used in the manufacture and preservation of butter and cheese; and another section as an exhibition-room of butter, cheese, dairy salt, and machinery.

Liberal subscriptions have already been made to carry out this project by dairymen, and it is hoped that an amount sufficient to provide for the expense of exhibiting the process of manufacture of butter and cheese will be subscribed. It is equally desirable that dairy salt, implements and appliances used in the preparation of dairy products be exhibited, and that they should be in immediate connection with the dairy building. To provide for this additional area the manufacturers of dairy implements and salt have been requested by the Centennial Committee of the Dairymen's Association to subscribe towards the erection of dairy buildings. All space in the main agricultural building is now consumed, and dairy utensils must of necessity be either exhibited in the dairy building, now about to be erected by the producers of butter and cheese, or in the shed annexed to be erected by the Centennial Commission.

Agricultural Calendar.

Work for the Month—March.

Whilst the open winter has doubtless given many opportunities for pushing matters ahead, the active labors of the field will not now be less pressingly felt; and, as a good beginning always largely tends to a good ending, it is essential to go to work promptly and with vim: that we may not only keep up to, but ahead of our work. It is truly said that it is the first step that costs, and it is often equally true that it is the first blow that wins. A resolute determination to deserve success often leads to it; and while the many wait for opportunities, the few make them. To take advantage of every favoring circumstance is as important on the farm as in any other branch of business; and commending to our readers the need for activity, and thoroughness in season and out of season, we proceed to some of the topics awaiting us.

Oats.—The earlier oats are sown, the better the prospect of a good crop in yield and quality. As soon as the ground is dry enough it should be broken up and harrowed and the seed gotten in as soon as possible afterwards. Some prefer to wait a few days for the soil to settle, claiming that this grain thrives best where the seed-bed is compact. The same object is attained by rolling after the seed is drilled, plowed or harrowed in.

Manures suited for this crop will be found in the compost heap, and the barn-yard. All the inorganic manures will likewise be useful, especially ashes, bones, salt and plaster. This crop, usually slighted, will repay any extra attention it receives in this respect. The seed of oats ought to be frequently changed, and that from a more northern latitude is preferable, being heavier and less chaffy than the grain becomes as grown in warmer districts.

Potatoes succeed best in soils with a considerable proportion of vegetable mould present in them, such as new land or good sod ground. Manures applied should be given in liberal doses, but they ought to be thoroughly rotted; and, by choice, of an inorganic character. Ashes are peculiarly adapted to these tubers, and the same holds good of salt, plaster, and bones, either crushed or dissolved. Rank and fermenting stable manure tends to produce disease.

The soil must be good naturally, or its faults artificially supplied; deep plowing and complete pulverization are equally necessary to good crops; and thorough drainage not less important. The seed for early crops should by preference be cut somewhat larger than that for late ones, and our custom has always been to roll the seed in plaster to dry the cut surfaces before planting, but some doubt the efficacy or importance of doing this.

Growers generally will have become familiar with the appearance and treatment of the potato

beetle. For ourselves we incline to doubt whether climatic causes will not operate in the eastern country to mitigate the attacks of this plague; though in the west it seems no longer to be apprehended, so thoroughly is it under control by the use of Paris green.

Orchard Grass is steadily gaining in the estimation of our farmers, and deserves extensive cultivation. A paper was promised us by a very intelligent grower, for this number, but at the very last moment we were informed that sickness prevented its preparation. We must therefore refer to our last for some details of its cultivation.

Lucerne.—The same remarks apply to this very important and useful plant, which is worthy of wide adoption in the Southern States. Mr. Popplein's communication has a great deal of force, coming from a gentleman who has grown this forage plant with success for many years.

Clover may be sown at any time before the spring rains. When the seed are sown on the snow, that melts and carries them down into the crevices of the earth left by the frost. Some prefer to wait until the frost is out, and the ground will bear the weight of the teams and then harrow in the seed and roll. For harrowing in the seed on winter grain Thomas' smoothing harrow is an efficient implement.

Meadows and Pastures that need renovating may be improved by passing a heavy harrow over them in different directions and sowing two bushels of fine bone-dust and five of ashes upon them. Seeds may be sown either of clover or timothy and orchard grass mixed, and a heavy roller passed over the fields.

Tobacco Beds.—Look well after these. Give occasional top-dressings of guano, or hen manure, and sift plaster over the plants. See that the beds are well drained and kept free from weeds.

The Corn Crop.—Abundant manure of good quality is requisite for the corn crop doing its best. This cannot always be attained, but the nearer the approximation to a full supply, the better; and it is well to bear in mind that there is more to be gained by making a good crop on ten acres, than a poor one on twenty. Not only are the organic manures readily appropriated, but the mineral fertilizers are quickly taken up by this rank feeder; so that manure from the barn-yard, composts, super-phosphates, ground bones, salt and plaster, are all acceptable.

Root Crops.—Preparations for these ought to be begun, and a deep and well-pulverized soil is the first necessity for their doing well. The satisfaction in their uses where either cows or sheep are kept will compensate for more trouble and expense than they require to be grown. The ground ought also to be made rich by the use of well-rotted manure.

Manure Making.—Whatever else pushes you, do not neglect this. The saving, mixing and care of all materials adapted to increasing your piles should be carefully attended to.

Horticulture.

Maryland Horticultural Society.

The February meeting and exhibition was held on the 17th, at the Academy of Music. The attendance was large, comprising many ladies; and the display of cut flowers and growing plants was exceedingly fine. The Camellias were superb. Amongst the exhibitors were Mrs. Isabella Brown (Mr. John Donn, gardener); Gustav Burger, successor to Zebulon Waters; Edward Kurtz; John Feast, and James Pentland. Captain Snow had *O. chida*, and a beautiful basket of cut flowers.

This being a stated exhibition of the Society, and prizes being offered in its schedule, Messrs. W. D. Brackenridge, August Hoen and John E. Feast were appointed an awarding committee.

The following awards were announced: Collection of 12 plants, one-half in bloom, first premium, \$5, John Feast; second do., \$3, James Pentland; best basket cut flowers, \$4, Captain Chas. H. Snow; hanging basket, \$1, James Pentland; best 6 Chinese Primroses, in pots, \$1, James Pentland; best 6 Hyacinths, in pots, \$1, Wm. H. Wehrhane; Camellias, best 12 named varieties, cut flowers, \$5, to John Donn, gardener to Mrs. Isabella Brown; second best do., \$3, John Feast; a special premium of \$3 to Gustav Burger for a display of seedlings, and honorable mention to Mr. Charles A. Oakford for display and large flowers.

Mr. John E. Feast read an interesting paper on the history and cultivation of the Camellia, and gave a list of fine varieties, especially those originating in this city.

Mr. John Feast, one of the oldest florists of Baltimore, and himself noted for the number of varieties which he has originated from seed, also read a carefully prepared paper on the same topic.

Mr. James Pentland having been called upon made some very interesting remarks concerning the same flowers. He said the Camellia is a flower very easily cultivated and especially adapted to window and room culture.

A motion of Mr. John D. Oakford having been adopted to that effect, a list of twelve varieties of Camellias, best adapted to amateur cultivation, was made up—it being understood that perfection, beauty of flowers, thrifty growth and other requisites were all to be considered, as well as the facility of obtaining the kinds named. After a very interesting discussion, and a thorough canvass of the favorites nominated, the following was adopted as a *provisional* list, subject to future review and alteration:

Double White; Fimbriata, white, fringed; Lady Hume's Blush, flesh-color; Fordii, pink; Sacco Nova, pink; Henri le Favre, salmon rose; Jenny Lind, white, pink stripes; Imbricata, carmine, with white flakes; Myrtifolia, light red; Mrs. Lurman, crimson, spotted; Virgine di Colle Beato, white; Reine des Fleurs, orange scarlet.

At the March meeting, Captain Chas. H. Snow will read a paper on *Orchids*, illustrating it with specimens in growth, or flower, of these splendid plants.

Potomac Fruit-Growers' Association.

February Meeting—Gala Day.

Messrs. Editors American Farmer:

As at this meeting officers were to be installed, arrangements were made at the last meeting for a social reunion to-day, and a good time generally.

On entering the rooms of the Society, your reporter was struck with the tasteful and profuse ornamentation with evergreens. On the "sample tables" there was a choice collection of fruits; whilst on the other tables there was a sumptuous entertainment, prepared by the ladies.

But I must let your readers draw on their imaginations as to how the four pleasant hours of the meeting were passed; what, with addresses by the inaugurated, the presentation speech, with a symbolic gavel to the retiring President, a poem by the Secretary, readings, addresses, songs, *bon-mots*, etc., etc., a large attendance, and an abundant refreshment.

On the "sample tables" were fruits as follows:

Of Apples—Abram, Albemarle Pippin, Cart-house, Limburtwig, Rawle's Jenet, Spitzenburg (of Virginia growth), Lady Apple (pronounced the Queen by Judge Gray), Roman Stem, Wil-lowtwig, and Winesap.

Of Pears—Vicar of Winkfield, Lawrence, Glout Moreau, and Beurré Easter.

Members from Virginia had the largest collections of apples, while Maryland excelled in her specimens of pears.

A jar of persimmons, "preserved in sugar," was tested by all present and pronounced "good."

Mrs. John Saul sent to the exhibition a beautiful stand of lovely flowers.

The discourse of Judge Gray, the President elect, was well-timed and pertinent to the occasion. I reproduce a paragraph which is just now of general interest.

"The want of the day is organized and systematic co-operation among fruit-growers. The necessity for this is more apparent in preparing for and marketing fruits. Especially is this so in regard to all that are designated perishable. The past season, being one of unusual productiveness in this middle region, has left on its records important lessons, which, being dearly learned, should not be soon forgotten! I allude to the hap-hazard way of shipping to particular points, without knowing the condition of that market in regard to supply and demand. You may remember that on a certain day last summer, early peaches were selling in New York city for \$1.50 per Jersey basket, equal to \$2.00 per bushel. Late in the day, a telegram announced 100 car-loads to arrive early next morning. The market would not bear more than half this supply: consequently prices fell to a figure less than freight and commissions, and became demoralized for the entire season; and the goose that was to have laid the golden egg was sacrificed.

We may suppose that there were at least 100 shippers owning these car-loads of peaches. Not one of this number knew what was to be the extent of the day's shipping. Each was anxious to crowd his produce on the market. All failed to realize anything; and many had to pay balances against themselves. These men were not novices: they were practical and sagacious;

men of means, and competent for successful business; but each did not know what the other ninety and nine were doing. *They had no concert of action; no organized plan that embraced the common interest.*

Now let us suppose that they had previously agreed that they would report to a "board of directors," or a single shipping agent, the quantity they would be able to ship on a given day, and had given to this board or agent full power to direct the place of destination. This agent could have known by telegraph the exact condition of the several markets, which the 100 men could not know. He would have known just where to ship, and how much; and these 100 car-loads could have been distributed in destitute markets between Boston and Chicago, and would all have brought satisfactory prices, and opened to the producers new markets for the entire season.

Is it not clear that arrangements of this kind would have saved millions of dollars during the past season? You could not find a like number of manufacturing or commercial men acting thus. Should an army of 100 regiments go to battle without a general to command them, would they not destroy each other? Just so these 100 producers destroyed their prospects of just compensation for their labors. And just as we will do year after year, if we do not learn wisdom from the past.

Let us remember if the article is perishable the greater is the necessity for system in selling.

I hope you will give the subject your careful consideration, and, if found worthy, you will inaugurate the movement by calling a convention of fruit-growers in New Jersey, Delaware, Maryland, and Virginia, to meet at some central point, to consider the subject, and that this centennial year may open up to us a more enlightened and fraternal intercourse with our brethren of other states."

G. F. NEEDHAM.

Washington, D. C., Feb., 1876.

Management of Orchards.

At the Pennsylvania Fruit-Growers' meeting, Mr. Jno. I. Carter said orchards would pay for more attention than now received; as the supply increases, the demand will increase in the like ratio. The varieties recommended for his section, (Chester Co.) were as follows:

Apples—Maiden's Blush, Smokehouse and Smith's Green, Pear—Bartlett, Lawrence and Seckel. *Cherries*—Governor Wood and Early Richmond. Judicious manuring and good cultivation are necessary, which are not to be discontinued after bearing begins. Plenty of mineral fertilizers were recommended. South Carolina rock was mentioned as adapted to the purpose. A wash made of muriate of potash, cow manure, sulphur and copperas was recommended to be used after pruning.

Mr. Magill, of Bucks Co., said an orchard of fruit ought to increase in value at the rate of \$1 per tree per annum, but this is to be effected by giving something to the land. Hoed crops were advised for the first six or eight years—potatoes being mentioned as well suited to the purpose.

Three or four hundred pounds of phosphate to the acre should be used. The crops would assist in paying for this cultivation of the trees. After that time the orchard should go into grass, and be mown once or twice a year. If the grass is removed manure should be returned. Stock ought to be carefully excluded. After the grass is under the trees, the fallen leaves make an excellent mulch.

Mr. Sprout, of Lycoming, said that his practice has been to use plenty of potash about his trees, in the form of wood ashes; also copperas water, applied at intervals of two weeks, to remedy fire-blight.

John Eastburn, of Bucks, recommended plowing under clover in orchards; also buckwheat. He objects to the practice of planting either rye, oats or wheat, and does not believe in plowing under sowed corn. He believes in perpetual cultivation of apple trees. Last year he marketed twenty-eight hundred bushels.

W. P. Magill referred to the orchard of Joshua Fell, near Doylestown, whose trees in the autumn resemble pyramids of fruit. They sell at from ten to thirteen dollars per tree. The orchard is twelve years old. The grass in the orchard resembles a well-kept lawn.

Mr. Magill favored low trimming, and stated that the best time to prune orchards is from the middle of May to the first of July. For a wash or coating he thought a solution of gum shellac in alcohol would be found satisfactory.

President Satterthwait said that low trimming was doubtless the best; that the leaf should be as near the root as possible.

Mr. Lint, of York, spoke of spring and fall pruning; he would cultivate an orchard for six or eight years, and then put it down in grass; and he preferred potatoes as a crop rather than corn for the young orchard.

Resuming the subject of the treatment of orchards, Thomas M. Harvey said that more light was wanted on the proper time of pruning. At one time he had pruned certain trees at intervals of two weeks during the year, to learn the effect. John I. Carter said that the limbs cut off in the first two months of the year, and in June, had healed most perfectly. The result was favorable to winter pruning, but all had healed without injury. Mr. Lint, of York county, said that his experience was in favor of pruning when the buds began to swell. They heal over sooner than at any other time. Mr. Satterthwait said that he had always been warned against pruning at that time—that there was a great confusion of ideas. Thomas M. Harvey said that all agreed that we should avoid pruning while the sap is running, which often causes much injury. Mr. Meehan said that as a general rule a wound made in summer will heal more rapidly, but in practice he prefers winter pruning. It is not well to remove branches while covered with leaves. H. M. Engle said that pruning was only a choice of two evils. If orchards were managed correctly very little pruning would be needed. If the tree can be trained right when young, it will never be required to cut off large branches. Prune as little as possible. Pinch off surplus buds or shoots when young, and we will have no need to discuss this troublesome question. W. P. Magill said that he agreed with Mr.

Meehan as to the time of pruning. Wounds heal over more quickly if done in summer, but in practice the winter is generally found more convenient. E. Satterthwait took the same view. A. R. Sprout, of Lycoming, said that a great deal depends on the condition of the cellular tissue; if it is full of sap when cut it is sure to bleed. But after the leaves come out trees may be pruned with safety.

Pruning Orchards.

Editors American Farmer:

It is better to leave an orchard unpruned than to mangle trees in the manner we sometimes see done.

If farmers and others who have young orchards growing up, would obtain a chisel say two inches wide, with a long handle, and a mallet, they will find it an easy matter to take out the young shoots and spray so apt to start up and crowd the centre of thrifty apple trees, &c. If this be done carefully while the trees are young it is but little trouble and no injury to the trees; it will also avoid the necessity for the use of that mangling implement, the saw. Quite a good-sized shoot may be cut with a chisel as we have described, by a light tap on the end of the handle with the hand. A little careful practice is all that is necessary to make it a rapid and pleasant job. F.

Fruit-Growing in Pennsylvania.

The annual meeting of the Pennsylvania Fruit-Growers' Society was held at Doylestown on 19th January, and, as usual, much interesting information was presented to the association on the occasion. We hoped to be present as usual, but, much to our regret, other duties prevented. The proceedings are published in full in the Bucks county *Intelligencer*. A table with specimens of apples and a few pears was filled with fruit.

It was stated that the apple crop of last year was short, and the present prospect for large fruit crops now is not good. Blackberries are neglected in consequence of the abundance of wild fruit. The Lawton is largely superseded by the Kittatiny. Wilson's Early is being abandoned because of its poor quality. An insect enemy, which attacks the roots and stalks, has appeared in some quarters. Raspberries are grown mostly near the cities. The black caps are perfectly hardy, and many of the red ones. The Herstine is the most popular. As to strawberries, the Wilson still leads in the popular estimation, and the kind that is to supersede it has not yet been discovered. There are many other good kinds, which do not quite fill the bill. Currants and gooseberries, unless well mulched, are seldom remunerative, and crops have been moderate.

A statement in regard to the effects of the cold in "sickening" apple trees was questioned by several persons. Mr. Sprout said that in Lycoming county peach trees have suffered in that manner. H. M. Engle thought that the wood growth was weakened by severe cold. It is the sudden and extreme change, probably, that does the injury. Mr. Pannebaker said that it is the

white frost that kills the trees and buds. Where the elevation and the winds prevent the frost, the trees are not hurt. E. Satterthwait said that the moisture of the air had much to do with it. Mr. Sprout related a case of an orchard on the south side of a hill, from which he never had a bushel of peaches. The wood grew late, was full of sap, and was injured in consequence. On a northern exposure he had excellent results. No trees in the valleys have done any good. Mr. Magill said that there was a difference in the hardiness of varieties. Mr. Meehan told a humorous story to illustrate the different opinions expressed on this point, to the effect that all the reasons given might be nearly right, but none altogether so. This discussion was continued at considerable length.

Cultivation of the Vine.

At the annual meeting of the Penna. Fruit-Growers' Society, held in January, among other subjects discussed was that of the vine, from the report of which we make the following selection:

Reports on grapes were meagre, compared with their importance. It is the most productive and profitable of fruits. Most of the new kinds have succeeded pretty well, but some are ruined by mildew. The Concord is still the grape for the million. The Martha is hardy and productive, and objectionable to some for its sweetness. It has sold fifty per cent. higher than the Concord in market. The hybrid varieties may be indefinitely multiplied, and many good kinds thus obtained. Isabella and Catawba are mostly discarded. Among the letters read from members who were not able to be present, was one from Mr. Huidekoper, of Meadville, in reference to grape culture, in which he is a proficient. He trims vines in October, taking off most of the laterals. The first of November all vines are taken down and covered. They are doubled up and covered with light-colored earth, which does not thaw so easily. Early in spring they are uncovered, and the result is a large crop of fruit. The Delaware rendered the best yield last season—better than Concord. Sulphur is sprinkled on the ground to prevent mildew. In grape-houses the glass should be whitewashed, to moderate the heat. Wood ashes are very beneficial. Old varieties give better satisfaction on the whole than novelties. Mr. Meehan spoke favorably of the processes employed by Mr. Huidekoper in his vineyards. The roots of the vines, outside of the houses, were thickly covered with leaves. H. M. Engle also approved very much of Mr. H.'s system of grape-growing. Mr. Sprout, of Lycoming county, said he had practiced covering the earth about grape-vines with much success. One year he covered the ground with the crushed stalks of sorghum and had the heaviest crop he ever grew. Forest leaves are the best mulch for strawberries he has ever tried. W. F. Magill said that for several years past he had mulched his vineyard with green grass cut from his lawn, with excellent effect. Mr. Satterthwait (the President) said that there was nothing to be compared with leaves for keeping out frost. They are the best protection for celery that he has ever met with.

Floriculture, &c.—March, 1876.

By W. D. BRACKENRIDGE, Florist and Nurseryman,
Govanstown, Baltimore county, Md.

Greenhouse.

The action of the mild weather, during the past winter, has excited vegetation, both in and out of doors, in an unusual degree; and now, in the latter end of February, the advance in growth is what we usually have at the end of March; consequently a great saving in the matter of fuel has been effected.

Camellias will now have pretty much exhausted their blooming; and just when they are about to make their growth, is a good time to shift such as require it, making use of a compost of friable loam three parts, the other part in equal proportion of well-rotted cow manure and sharp sand; observing to drain well with broken pots and charcoal. Over this drainage place a handful of Sphagnum. After shifting is done, keep the plants close, and raise the temperature a few degrees for the first two or three weeks.

We know of cultivators who have had Camellias in bloom all the year round. This is brought about by forcing a few plants early into growth; and by repeating this year after year, they can be got to bloom as early as September and October; earlier than this is not desirable.

Azaleas that require it, so soon as done blooming, should be shifted into larger pots. A good compost for these is two parts turfy loam, one part peat or woods earth, another part to consist of charcoal and sand; observing as with Camellias, to drain the pots well, as without it no good specimens will be obtained. Thrips, more than any other insect, are troublesome to the Azalea, and they cannot be easily exterminated by fumigation of tobacco. The best way we have found to kill them is to make use of a strong decoction of tobacco liquor, and by holding the plant over a tub and applying the liquid with a syringe; in this way little of the liquid is lost.

Bouvardias may now be cut down, so as to secure good cuttings for multiplication. But a quicker way to procure a stock of young plants is to turn the plant out of the pot, and in reducing the ball, before potting again, select a few of the strong roots; cut these into pieces one inch in length, and insert them then, full length, into boxes or pans filled with rich sandy soil, keeping them in a warm place until they have sent up shoots an inch long, when they should be potted off singly into small pots. These young plants, if planted out in a bed of rich earth during the summer, will, lifted in the fall, bloom freely in the conservatory next winter. Geraniums and Pelargoniums should receive abundance of light, observing to shift into larger pots as they require it, and keep tying the branches out, and turning the plants around frequently, so as to have their heads symmetrical and bushy. The only insect likely to attack them is the green fly; but this is easily got rid of by fumigations of tobacco. But it must always be borne in mind, that the delicate young fronds of ferns, particularly *Adiantums*, are liable to get injured by smoke—so, also, are young *Fuchsias* and *Heliotropes*; therefore to save them they should be set down on the floor.

Now is a good time to overhaul and shift into fresh earth, all tuberous-rooted and fancy *Begonias*, which like a partially-shaded, warm situation, and delight in a light, rich, sandy soil, having the pot well drained.

Ferns are now becoming deservedly popular; some of them are very easy to cultivate. It is a good time now to repot, divide and otherwise multiply; many kinds produce prolific buds, which, if placed in earth in a warm moist place, will soon expand into plants; while all may be raised from spores, under peculiar conditions, and these are humidity and a warm temperature.

It is not yet too late to sow *Mignonette* in pots; sow thick and afterwards thin out to 5 or 6 plants in a 5-inch pot. Such climbing plants, as *Manettia cordifolia*, *Cissus discolor*, *Bignonia* of sorts, with the various large flowering kinds of *Clematis* and *Clerodendron Balfourii*, ought to be cut down, repotted and placed in a warm place to start them into growth.

Lawn and Pleasure Grounds.

So soon as the ground is dry, planting deciduous trees and shrubs should be set about, and if the specimens are large the branches should be cut back about as much in proportion as the roots have suffered in taking up. All large wounds should receive a coating of pitch and tar, and the top be supported by stakes; but some people place heavy stones around the tree; this is not a bad plan, as it keeps the tree steady and retains the moisture until such times as the roots take hold of the ground; but then it is a little unsightly on a lawn near a dwelling-house. Plant shallow, and mulch the surface for the first year at least. The planting of evergreens had better be left until April and May.

Those who have no greenhouse should select a dry sheltered situation to make up a hot-bed. The best material to make this bed is about one-half fresh stable manure, the other half oak leaves. The height of the bed should be from 2 to 3 feet, and its breadth about 1 foot wider than the box or frame. On this latter the sash should be placed, in order to draw the heat to the surface, and in about one week the bed will be ready to receive a layer of light earth from 4 to 6 inches in depth; on this, seed of annual and other plants can be sown, and so soon as they make their appearance above ground, air should be given during the day, and in cold weather a covering will be required over the glass at night.

It is always desirable to have a few spare sashes, of which to form a cold-bed to receive surplus bedding-out plants, which are crowding the greenhouse.

Sow grass and clover-seed on any bare or thin spots on the lawn, after which the whole should be raked and rolled. The gravelling of walks and roads should now be attended to, and the coverings on beds and bushes should be opened so as to admit light and air, and towards the end of the month all should be cleared away, and the beds and borders dressed up neat and clean.

Gas Lime.

The People's Gas Co. offer for sale a very large quantity of this material and at a low price, which will enable those desirous of using it to do so at a small cost.

Occupation for Amateur Florists.

The wonderful perfection reached in Double Chinese Primroses by Mr. John Saul, of Washington, who explained when "called up" by President Perot at the January meeting of the Horticultural Society, that his success was due to careful selections through a series of years, in many of which no progress at all was made, suggests to us to say that most of the great improvements in florists' flowers which the English and Continental growers have made, have been the result of long and critical selection, by men who make a special favorite of one particular plant. In England, especially, these men are not always professional gardeners, but amateurs of enthusiasm and means.

The time and the space necessary for experiments in this direction cannot always be afforded by florists in trade; but the field opened for amateurs is a wide and promising one. In our climate there are numerous flowers which present better opportunities for improvement than in that of England; and an amateur offering one which shows a decided advance on those already known will find commercial men ready to take hold of it. To have a "hobby" and keep pressing its improvement will maintain a pleasant state of expectancy in an enthusiastic man, and a reputation for excellence in producing superior strains of any special plants may finally make the hobby pecuniarily profitable.

Winter Flowers Out of Doors—Tea Roses—Carnations.

Editors American Farmer:

In your report of the January meeting of the Maryland Horticultural Society you mention the fact that Mr. Frazer had *Jasmine nudiflorum* from open ground, in bloom. This plant has also been in bloom here, and *Pyrus Japonica* also; but we are now having the coldest weather of the winter, and these flowers are no more. I have frequently heard of Mr. Saul's *Primulas*, and would have been very much pleased to have seen them.

Your correspondent, "Cedar Mount," gives a method for protecting Tea roses, which is doubtless a good one, but which involves an unnecessary degree of labor. Cover the ground all around your Tea-rose bushes with a six-inch mulch of straw, and no Maryland winter will do them any material injury: at least we have never lost a plant so protected. The practice of tying the tops up with straw, and leaving the surface of the ground around uncovered, is another method we consider a waste of time and labor and an injury to the plants. Mr. Brackenridge, in his floricultural notes, names several varieties of winter-blooming Carnations, which are good; but he omits one we value very highly: this is

Edwardsall, white with faint rosy flakes, a strong grower and very free bloomer. Among winter-blooming plants I think I have already spoken of *Crassula Cordata*. I like it more and more. It is very profuse in bloom, and its delicate sprays of white flowers "make up" beautifully.

W. F. MASSEY.

Riverbank, Chestertown, Md., Feb., 1876.

The Camellia.

Mr. James Pentland, in his extemporary address at the last meeting of the Horticultural Society, said the ladies ought to know that there is no necessity for banishing this beautiful plant from their collections for the house and window gardens. All that is necessary is to keep them elsewhere than in a heated, dry atmosphere, like that of most living-rooms. If placed in a window, in a room not kept many degrees above frost, washing the foliage occasionally to free it from dust, and these magnificent plants, with due attention as regards water and air, will give more satisfaction than almost any others that can be grown in the house.

Mr. John Feast, in his essay, said that keeping these plants in too much heat was very detrimental to their growth, and is the reason of their general failure as house plants. They will stand, he said, much hardship, and the less fire heat they receive the better, if proper attention be paid to watering. If your plant has been properly potted, by using good drainage, it is not apt to be injured by watering.

In plants that are sickly the foliage assumes a pale color, and is soft to the touch. The first thing to resuscitate them is to re-pot in good soil, with plenty of drainage. Sometimes the roots are thoroughly washed free from the earth with fresh water.

Different cultivators have different views with regard to soils, but Mr. Feast favors a fresh, loamy, soft, silicious soil, taken from an old pasture-ground, about an inch and a-half deep, and laid away one season to decompose, and when the plants are to be potted, add one-third of its bulk of the following: leaf-mold—cow manure, a small quantity of charcoal, and a little old mortar, all mixed together. For drainage, rough charcoal is probably the best material, and may be used by placing a little moss over it before putting in the plant.

Wild Gardens.

These, says Mr. Meehan, might be a cheap and pleasant adornment to many a farmer's home. Many plants cannot be grown in our climate when exposed to cold, dry winds. If these plants were set in the borders of blackberry patches, or among similar wild bushes, they would do well. There would always be something to interest one in such a clump as that. The *chrysanthemum*, which is often killed outright in our open borders, would live out safely in such wild clumps as these.

The Vegetable Garden.

Work for March.

The season for active work now begins, and the preparation of hot-beds for tropical plants should be attended to forthwith;—the ground made ready, manure applied, &c.

Asparagus.—Seed may be sown for plants; and old beds forked up lightly and dressed with manure and salt.

Cabbage and Cauliflowers from cold frames may be planted out. The soil should be rich, and the plants frequently hoed.

Celery.—The seed should be sown as early as possible. We tried last season with much satisfaction the Dwarf Sandringham.

Lettuce kept over may be planted out, and seed sown for succession.

Onions.—Seeds and sets may be sown and planted as soon as practicable to work the ground, which for this crop must be rich.

Peas.—Early sorts should be sown as soon as the soil can be worked. Make the drills deep, say four inches, cover thinly with earth, and then put on top a good coating of fine manure. Put the brush to the vines as soon as they are two or three inches high, as they take hold better.

Potatoes are by some put in a hot-bed to sprout; and it is usually considered best to dry the cut surfaces by plaster, or by keeping in a warm room for a day or two. Plant early on good, peaty soil.

Radishes may be sown in succession. They like a light soil.

Salsify should be sown early, in drills, say 16 inches apart. Work early.

Spinach may be sown towards the close of the month. The fall-sown crop should be well cultivated.

Turnips may be sown as soon as the ground is in a fit condition.

In your hot-bed sow egg-plants, tomatoes and peppers, to be set out in May. In this way, too, may be forwarded cucumbers, melons and squashes. The preferable plan is to cut square pieces of sod; turn them grass-side down and plant the seeds on them, which makes them easy to be removed.

Have your tools in order, seeds ready, and everything prepared, that there may be no delays at planting time.

DRY FOOT-ROT IN SWINE.—This complaint is mainly due to filth, though various other causes are known to produce the same effect. As soon as the soles are discovered to be in a dry, cheesy, and scaly condition, the animal should be removed to well-littered quarters. The decayed parts should be carefully pared and scraped off with a knife not too sharp, as it is necessary to avoid wounding the sensitive part of the foot. The feet should be examined daily, or every other day, according to their conditions, and a small portion of the following mixture applied: "Creosote, half an ounce; spirits of turpentine, one ounce; olive oil, four ounces. Shake before using, and apply with a small brush."

Lucerne.

Messrs. Editors American Farmer:

As promised, I herewith give you my small experience in setting lucerne clover-seed. In Germany they prefer sowing it with barley and oats, 15 lbs. to the acre, as early in the spring as possible, and the second year and for ten or twelve years thereafter they cut from two to three crops, according to a favorable season, and in proportion to the top-dressing of the field.

The soil need not be the very best, such as is required for wheat, but the ground must be ploughed deep and well cultivated, so that *every weed* is thoroughly eradicated; as weeds will choke the young plants, while the oats or barley will afford them shade.

I have seen gravelly hill-sides in Germany that were left uncultivated, and were not considered worth the taxes upon them before the introduction of this clover, which lands now could not be bought for ten times the price, as they now produce rich crops from year to year of from two to three tons of hay per cutting.

I have been preparing, for two seasons, a hill of about seven acres sloping down to the St. Mary's river, oats in the spring and turnips and ruta bagas in the fall; so as to get rid of every weed apparent. These seven acres I intend to have sown in oats and this lucerne clover as early as the coming month of March will permit. This hill received 25 bushels of lime to the acre a year ago, and some barn-yard manure; also, about 200 lbs. of fertilizer to the acre when seeding the oats. I had it ploughed nine inches deep in November last, after the turnips were taken off. Now, early in March next, I intend to give it 25 bushels more of lime to the acre, then to pass a heavy harrow (*weighted* with a man riding on it and drawn by three horses) over it, after which I will give it all the stable manure we can spare, probably five loads to the acre, and then sow two bushels of oats to the acre, and have the oats ploughed in with the manure by a shovel plough about two or three inches deep. Then we intend to spread 250 lbs. of "Poppin's silicated super-phosphate of lime" to the acre and pass a Thomas smoothing harrow over it freely, after which we shall sow broadcast 15 lbs. of lucerne clover-seed to the acre, and have it *put in with a brush*.

The lucerne seed we will not sow until it has the appearance of rain, as it is very important that this seed should get an early drenching after it is put in the ground. This lucerne is the same as the South American and Mexican Alfalfa, on which they feed their horses and mules without grain, and yet they stand great hardships. The lucerne clover-hay I found the richest milk-fodder for cows. Yours respectfully,

NICH. POPPLEIN.

Baltimore, Md., January 30, 1876.

Report of the Enterprise Club of Montgomery County, Maryland.

The year just past, so far as our Club is concerned, has been chiefly remarkable for its lack of novelty in matters of interest. I do not mean to say that our meetings have abated in their usefulness; we have had delightful occasions,

but there has not been that freshness about them that has characterized our meetings in former years. It cannot be that we have already learned everything that is of value to farmers, although we have really gained much, and some of us think we know a great deal,—for at our meeting last month, a question was agitated and referred to this convention, in regard to the value of crushed corn for stock. Now this very same question was discussed by agricultural societies and eminent agricultural writers as long ago as 1832, and yet, to this day, it is not a settled truth whether crushed corn-cobs are suitable ballast for a cow's stomach.

The fact of this and numerous other questions being continually brought up for discussion, gives rise to the query: Is there a single theory in which doctors all agree; is there a single subject or principle in which farmers all concur as an established truth? Echo answers yes, one,—the taxes.

In arithmetic there is a rule for determining how many combinations may be formed from a given number of letters, figures or facts. We find, that with 8 letters 6 combinations may be made, and with 6 letters, 720. Thus we readily perceive the difficulty farmers labor under: they *always* have numerous contingencies to be arranged into favorable combinations to produce profitable results. To illustrate my application of this rule: we have soil, moisture, temperature, plant-food, sunlight, time of planting, manner of cultivation, and many other things to be considered, which, in the hands of different experimenters, may give almost an infinite number of combinations or circumstances to produce different results. This is my explanation of the reason why farmers do not yet understand, that corn cobs are better to kindle kitchen fires than to keep up the vital spark in cattle and horses.

It is some consolation to know that things are generally valuable in proportion to the difficulties to be overcome in their attainment. Had the alchemists of the middle ages succeeded in transmuting the base metals into gold, that commodity now would be of little more value than soon will be the material on which is printed the promises to pay, which at this time decorate our pocket-books. It is a wise provision of nature, that there is no fixed rule by which we can certainly raise 300 bushels potatoes, 25 barrels corn, or 40 bushels of wheat, on an acre of ground. Could this be done with certainty, the values of such products would be greatly diminished in the markets, and agriculture would lose many of its attractions, strange as it may seem. There is, undoubtedly, much farmers may learn by discussions at clubs, in agricultural papers, and in assemblages of this kind, but there is one sure thing: they will never learn how to make 40 bushels of wheat per acre with absolute certainty.

Some one who attended the convention here last year, said when he went home he did not like the proceedings at all, for members of the different clubs did nothing but cast slurs at each other and make sarcastic and disagreeable remarks. That man, whoever he was, evidently could not see a joke. I do not claim any superiority of the Enterprise Club over its contemporaries, but we do know some things which they

clearly do not. At one of our meetings this year we had a guest, "who, on being asked whether he had a question for our august body, said yes: he wanted to know what ailed his heifer; she had not as yet cut any of her teeth on the upper jaw!" Upon another occasion a member of "The" Club did not know that a male mule colt needed castrating. I merely mention these two facts to show that the Enterprise is still doing good, teaching their fathers and sons things pertaining to farming.

Among items of interest in the minute-book of the past year, I find that a 4-horse load of good manure is considered worth \$4.00 delivered on the farm. A barn to protect hay, wheat, &c., pays to the farmer an annual interest of 15 per cent. G. Farquhar proposes to divide his place; convert one-half into permanent pasture, and rotate the other with grains, grasses, and soiling crops,—the plan thought well of by most. Enterprise Club thinks cattle can be bought in fall and fattened to profit, provided thrifty steers are purchased. Wm. E. Manchester introduced into our Club the plan of substituting black-eye peas for clover, on poor soil, as a renovator, to be plowed under for wheat whilst green, as adopted in Virginia, and two essays on the same subject were read at another time,—one written by James Allison, of Richmond, the other by Mr. Burnett, of Howard county. Several bushels for seed were ordered and the matter will be tested, and it is to be hoped reported at our next annual convention. Hens will not lay well in winter when fed on corn alone.

In the minutes of the meeting held at B. H. M.'s the secretary remarks: here we saw a remarkably fine herd of cows; those making the best show for milk and butter, being part Alderney. One of our members has a son of 18 years, who keeps the accounts with the farm hands and pays them their wages. Another member has a son about the same age who has frequently, the past summer, delivered promptly the butter and cream product of his father's dairy to their regular customers in Washington city. One member makes it a point to call in his hands from work at 5 o'clock on Saturday evenings in summer.

G. Farquhar has a horse-power corn and cob mill, and he and some of his neighbors are using it to their satisfaction.

At a meeting of the Montgomery County Agricultural Society, held January last at Rockville, present: 1 member "Montgomery Club;" 4 members "The" Club; 10 members "Enterprise Club."

REPORTS OF CROPS, &C., PAST YEAR.

Potatoes.—Number acres planted, 36; total amount raised, 4,693 bushels; average per acre, 135 bushels.

Corn.—Number acres planted, 378; total amount raised, 3,466 barrels; average per acre, 9½ barrels.

Wheat.—Number acres planted, 333½; total amount raised, 6,954 bushels; average per acre, 19 bushels.

Hogs.—Number butchered, 178; total weight, 26,820 lbs.; average per head, 150 lbs.

One member has sold during the year 175 pigs at prices ranging from \$3 to \$10 per

head. Another member has sold 13 pigs for \$63.

The crop of hay is reported from $\frac{1}{2}$ to 1 ton per acre; 70 $\frac{1}{2}$ acres of potatoes planted in 1874, 31 in 1875.

T. J. Lea reports 112 $\frac{1}{2}$ lbs. wool from 10 head sheep; 14 lbs. from one ewe.

Fred. Stabler had 140 bushels rye and 6 tons straw from 4 acres.

Fine half Percheron horses are now frequently seen in this part of the county. Credit due to S. Hopkins, of the Enterprise Club.

Another thoroughbred Short-horn bull has been imported into the neighborhood by T. J. Lea.

No argument is more potent than well-authenticated statistics. The year just past, so far as one can judge by looking on the bright side, has been one of average prosperity. Although no one of us has grown suddenly rich, yet it is hoped and believed there has been a steady progress towards gain,—if not of gold, that which is far better, a clear conscience and a charitable disposition. Upon the whole there is a great deal to keep farmers cheerful and their wives and children happy. Tradesmen, merchants, bankers and railroad men, all have their troubles. Let us not magnify ours.

Proud cities rise in every land,
Fine churches show the builder's hand;
The student burns the "midnight oil,"
Metal is wrought with skill and toil;
Fair ships set sail from every port,
Brave soldiers guard the town and fort;
But rich or poor, or great or small,
The men who farm must feed them all.

Some members of our Club have shown great enterprise by engaging in other pursuits in addition to their regular farming. For instance: Arthur Stabler has made and sold in the last few years over 100,000 bricks, besides quite a number of drain tiles. T. J. Lea has sold over \$7,000 worth of beef in 12 months. He is the gentleman who furnishes our Club suppers with beef-steak; he may yet have to furnish each one of its members with a new set of teeth. W. S. Bond has manufactured and sold super-phosphates the past year.

P. T. Stabler, knowing that cleanliness is near akin to godliness, has sold numerous washing machines.

There were between 3,000 and 4,000 boxes of peaches shipped to Washington city, by members of this Club, the past season.

It is hard to come at an accurate statement of the dairy product, some of us not keeping strict accounts, and others not liking to tell how little butter they do make.

Proper Uses of Straw on the Farm.

BY D. M. MATTHEWS.

[Read before the Farmers' Club of Baltimore Co., Md., and furnished for publication in *The American Farmer*.]

The requirements of the farm-yard necessitate the use of certain quantities of straw, but I think its use in barn-yards needs some modification. For instance, the putting of large quantities out at a time, and letting the cattle eat what they like, and tread the rest under foot into in-

different manure, is still finding favor with many; at least, if not finding favor, is practiced.

Then, again, there are those who stint their stables and barn-yards of straw; for we sometimes hear the question asked: How shall I manage to have all my straw trodden into manure? And then another: How shall I get straw enough for my stock? In the first instance, no value is placed upon the straw, only for manure. In the second, it is valued for feed.

The question then arises: What is the proper value of straw to the farmer or feeder? It is a mistake to be over-anxious to have too much straw in our barn-yards, as it makes but very poor manure for itself, but as a litter and as a medium for absorbing the liquids and solids of the yard and stable, it is of very great value; in fact, almost indispensable. But using it in our barn-yards simply to get rid of it, is a mistake. As a litter, it is of more value than for any other purpose—not only for absorption of the liquids; but for the bedding of stock. A wish to save straw occasionally leads to a sparing use of it in the stables, always resulting in the immediate discomfort of every head of stock. In fact, the best of food and unremitting attention will not compensate for the want of a comfortable bed for the stock— independent of the loss of the liquid which would be taken up by its generous use. And a farmer or feeder had better buy straw than be without it for these purposes (provided he does not pay too much for it.)

The question then presents itself: What is straw worth for these purposes? From my experience, I should think it is worth, for the above-named purposes alone, at least ten dollars per ton, independent of any marketable value it may have in comparison with other products of the farm. Upon some farms large quantities of straw is grown, and then what shall we do with the surplus is the question? The present high prices and growing demand for meat will make us look enquiringly at our straw-stacks, and we are anxious to know if all the value departed with the grain; or if there cannot be produced from it beef or mutton, or will it not assist very much in saving other feed?

There are but few farmers who do not use straw, to some extent, as a substitute for some portion of the more costly articles of food. Then the question comes home to every farmer: What is straw worth in comparison with other feed? I place but little value on straw alone; but in some instances have seen cattle fed on straw and nothing else for five months, and look well in the spring. Consequently there must be some value in it as feed, but what its comparative value is I cannot tell, though I am sure we could use, by proper management, a large quantity of our straw advantageously for feed; and what is not used in littering the yards and bedding had better be sold, provided a price that will justify can be obtained, than that may be used on our yards than will keep them dry, and can be converted into good manure.

Agriculture in the Legislature.

The Senate Committee on Agriculture reported adversely on the law proposed by the State Grange of Maryland for the protection of sheep against dogs. Numerous petitions have been presented from clubs and individuals for action.

Maryland State Agricultural Society.

The monthly meeting was held on 3d February. The subject of county roads was considered, and a committee appointed to confer with committees from farmers' clubs upon the best plan for their management.

The system of licenses to sell liquor was likewise considered, and the president (Mr. Davis) said that the law which had been in force in the first district of his county (Montgomery) for years, was found effective; which secured all the benefits of local option without being objectionable. The clerk of the court was not allowed to issue a license unless a majority of the property-holders living in the neighborhood of the proposed selling place came forward and testified to its expediency and necessity.

Mr. Davis also alluded to the progress of the primary school system of Maryland, and thought that the expansion, including all the higher branches of education, was likely to lead to the neglect of the elementary branches; and that under the present system it was no wonder that the people are taxed to the tune of \$383,440 for common school education.

Resolutions were adopted urging the Maryland Legislature to make a suitable appropriation to secure a proper representation at the Philadelphia centennial exposition of the arts and productions developed in Maryland during the past century.

Tobacco Beds.

A correspondent of the *Southern Planter* gives the following plan for raising tobacco plants without burning the beds:

"I make my beds in the woods, where the soil is well covered with leaves,—southern exposure preferred,—always selecting such land as will retain moisture, but not sob. I rake off the leaves, then sweep with brush-brooms, so as to have the land perfectly clean; then couler deep with two or three horses: if not convenient to couler, I use grub-hoes as deeply as possible. After the beds have been well coulered or hoed until perfectly fine, and all the roots well gotten out, I use some good fertilizer. I prefer Gilham's Tobacco Fertilizer.—In fact, think it has no equal for plants,—applying 30 lbs. to 100 square yards, to be hoed in, not sowing it all at one sowing, but sow over the bed two or three times, changing direction every time, so as to have the fertilizer evenly and equally distributed over the bed. Rake well with hand-rake and sow the seed, not more than one tablespoonful per 100 yards; then whip with brush, so as to break all lumps and get the seed in; then cover with good stable manure that has no grass seed of any kind in it; put on the manure thick enough to hide the surface of the bed completely. If good suitable manure cannot be had conveniently, stamp with the feet and cover with naked brush very thick. After the plants are up, if they do not seem to be growing fast enough, top-dress with the fertilizer once or twice a week, always taking care to apply it on a clear day, and about the middle of the day. If put on when the plants are the least damp, it scalds them. I have pursued this method of raising plants for the

last 18 or 20 years, without the slightest failure; and can confidently recommend it to the farmers as much more economical than the old way of preparing by burning, which is very disagreeable to those engaged in it, and a great waste of wood.

In 1871, I prepared and sowed a plant-bed as late as the 13th of April, and set out plants from this bed the 8th of June. I have done more: I have made beds in a broom-straw old field, treated as above, and had perfect success."

A Western planter gives the following directions for preparing tobacco beds in that section:

"Select a spot of land with a slope to the South, where it will receive the sun's rays all day, especially in the morning, burn well with brush and some heavier wood; after cooling off, remove brands and coals, leaving the ashes to be worked into the soil; dig two and a-half inches deep with a hoe, pulverizing the ground thoroughly, and mixing the ashes well with soil, then rake smooth and level, removing all the roots and other trash; then with rake handle, mark in both ways, four feet between marks. Put a tablespoonful of seed into a gallon of sieved ashes; sow one way, and then sow across the other, which will make the sowing regular. After sowing, tramp or roll so as to imbed the seed well, ditch around the upper side to keep off water, and cover with brush cut from a living tree, or green hazel bushes, sufficiently thick to protect from the wind. Sow any time from first of January to the first of April, when the ground is sufficiently dry. If sown as late as April, sprout the seed before sowing."

Tobacco Interests of Maryland.

An important meeting of the tobacco-growers of the lower counties of Maryland was held at Upper Marlboro' on Wednesday, 23d February, with Dr. Joseph H. Blandford presiding. The bill now pending in the Legislature on tobacco inspections was read, and several amendments suggested. One of these recommends the abolition of the office of Supervisor of Warehouses, which, in the opinion of the growers, is an expense without benefit. It was resolved that "the existing law which prohibits the shipping of tobacco from the State until inspected in Baltimore makes an unjust discrimination against the growers of our staple, and we therefore earnestly urge its repeal." It was voted that the penalty for false packing should be increased to \$50, and the outage on tobacco reduced to \$1.50. The following was recommended as section 10 of the bill:

Section 10. That all tobacco inspected at the State warehouses shall be weighed before inspection as well as after inspection, so as to show the loss in handling the same: said weights to be entered on the books of the warehouse, with the name of the owner and of the consignee, if the tobacco is consigned.

It was resolved that private inspections should be allowed, and the following preamble and resolutions were adopted:

WHEREAS, We have noticed among the proceedings of our Legislature that leave has been asked for and obtained to report a bill providing for the rebuilding of tobacco warehouses Nos. 1 and 2, upon the old sites of said warehouses; and

WHEREAS, We desire to protest against the passage of such a bill, believing the interests of the tobacco planters require that the said warehouses should be rebuilt upon deep water; therefore

Resolved, That we earnestly petition our Legislature to appoint a committee to select a proper and convenient site or sites upon deep water for location of said warehouses, and that the old sites of said warehouses be sold and the proceeds thereof applied to the purchase of other sites upon deep water for said warehouses, and that at least one of said warehouses be built at Canton.

The following committee was appointed to wait on the Legislature on Tuesday, 29th; and inform it of the views of the meeting:

Calvert county—Edward H. Morton, Dr Geo. H. Jones, N. D. Wilkinson, Walter S. King, C. R. Belt, John Gibson, Dr. J. C. Parker, William Hutchins, 'thos. Parran, John T. Bond.

Prince George's—Dr. Joseph H. Blanford, John Bowling, Colonel Richard Wootton, Dr. Charles A. Wells, Fendall Marbury, Henry W. Claggett, Joseph M. Parker, William B. Hill, Benjamin H. Beckett, Dr. Frederick Sasscer.

St. Mary's—Oscar G. Hayden, Colonel John F. Dent, Dr. John M. Broome, Dr. Walter Briscoe, T. P. Dawkins, George Thomas, Dr. James Thomas, J. Hancock, J. B. Langley, J. B. Grayson.

German Millet.

A correspondent of the *Farmers' Home Journal*, (Mr. J. W. Leonard, of Madison county, Tenn.) sends that paper the following report of a crop of this millet, which seems all through the Southwest to be rapidly gaining popular favor:

In the spring of 1874, my neighbor, Wm. Biggs, sowed two bushels of seed on about two acres of ground. The season was very dry; adjoining land, and of the same quality, producing only three barrels of corn per acre. The millet was sown on the 9th of June, and cut in September. Mr. B. estimated the yield at four tons per acre—my judgment, not under three at the lowest. He fed his stock with a portion of the hay unthrashed. The horses and cattle preferring it to timothy or fodder. The rest was stacked in the fields, and thrashed in February, 1875, turning out forty-four bushels of seed, worth \$5 per bushel; although he sold some early in the season for less. The straw made an excellent distender, and stock ate it readily. Allowing a liberal estimate, the whole amount was six tons—about two-thirds thrashed, made forty-four bushels, at \$4 per bushel, \$176—two-thirds thrashed and one-third not thrashed, hay, say \$100, giving a total of \$276 realized from the yield of two acres of ordinary land. As the seed becomes more plentiful, the price will decrease, though I think the demand in this section will keep the price up for a few years yet. A grass that produces from three to four tons of good hay per acre, containing from twenty-five to forty bushels of seed, and alone sufficient to fatten stock not worked too hard, is certainly superior to any grass that we have ever grown in this country. I was a witness to all the above-mentioned results in relation to Mr. B.'s

crop. Last spring Mr. Biggs and I, as partners, sowed eighteen acres in German millet, and eight acres in seed we bought in Louisville, Ky., part for Missouri millet, the remainder for Hungarian seed. Both brands produced the same kind of a very inferior grass: the eight acres not making more than six tons, and that on our very best land. The eighteen acres of German millet made thirteen stacks of a very fine quality of hay, containing from five to seven tons per stack.

The calculations were made by a rule found in your paper, allowing from 216 to 243 cubic feet to the ton. We allowed 230 cubic feet to the ton. The measurements and calculations were made by Jas. J. Inman, C. E. He says according to the above rule, the lot of hay will turn out seventy-five tons. It seems quite reasonable that grass containing so much seed will weigh more in proportion to its bulk than the average quality of hay.

A bushel of seed is usually sown to the acre, from the middle of April to the middle of July. It needs well-prepared and good ground and should be cut when in early bloom.

German millet has more blades, a softer straw, more seed, stands exposed to the weather with less detriment, loses fewer seed in handling, is a better nutritive for stock, and hay-eating stock are fonder of it than of any other grass I know of.

David Dickson on Cotton Planting.

The following is copied from a "Treatise on Agriculture," by David Dickson, Sparta, Georgia:

1. Lay off cotton rows four feet apart, with shovel plow, double furrow; and put in fertilizers eight inches deep.
2. Ridge with a long scooter, five inches wide. Make the beds with turn plow, sub-soil the turn-plow furrows; split out the middles with shovel. Plant with a cotton-seed sower, and cover with a board or harrow.
- First plowing—run 22-inch sweep with right wing turned down, hoe out to two or three stalks to the hill every nine inches, ten days after plowing. Second plowing—use same sweep, the right wing turned up a little more. Third plowing—in same way, run a third furrow in middle to level.
3. Cotton standing thick in the drill will be much more forward in maturing.
4. Cotton only requires distance one way.
5. Be careful not to cut the roots of cotton.
6. Have a deep water furrow in the spring; work flat by hot weather.
7. On level land run the rows north and south.
8. A cotton plant to stand two weeks drouth, must have four inches soil and six inches sub-soil; three weeks—six inches soil and same sub-soil; four weeks—eight inches and the same sub-soiling.
9. If you prepare your land and carry out this plan well, and manure liberally, you may expect from four hundred to one thousand pounds of lint cotton per acre.
10. Fertilizers bring a crop of bolls on the cotton early.
- 11 To improve the cotton plant, select seed every year after the first picking, up to the

middle of October, taking the best stalks and the best bolls on the stalks.

12. On all farms there are some acres that produce cotton better than others: seed should always be selected from those spots.

13. Manure everywhere you plow and plant; your labor will be more certainly rewarded. It pays to use manure, and it pays best on land that pays best without it.

14. From the 10th to the 20th of April is the best time to plant cotton.

15. Apply one-half of all labor and land to the making of full supplies of all kinds that are needed on the farm, and enough to spare for those engaged in other pursuits, and you will have *more money* than if the whole was employed in making cotton.

16. Leave no grass to bunch and cause a future bad stand.

17. Plow cotton every three weeks and let the hoes come ten days behind, cleaning it perfectly.

18. Continue plowing cotton till the 15th or 20th of August. Once or twice during the season, shove out the middle with a furrow, to keep the land level.

19. The plowing of cotton requires one and a fourth days per acre.

20. Cotton plants commence when small to take on and mature bolls and continue until they exhaust the soluble matter or reach the full capacity of the land. Two stalks will do that much sooner than one and will so avoid the late drouth, caterpillar, etc.

21. Cotton will grow after cotton a number of years in succession, with plenty of manure.

22. Make just the amount of cotton wanted, at *paying prices*. Keep out of debt, be the creditors, make your supplies at home; then and only then will you have power.

23. Rotation of crops, deep and deeper plowing every year, incorporation of vegetable mold, returning the proceeds of the cotton plant except the *lint* to the soil, making as much manure as possible, comprise my system of improving lands.

24. One object in cultivation is, to keep the surface broken, so as to let in light, heat and air. Never stop the plows for dry weather.

25. My policy has been to make the most money, with the least labor and capital, even if it appeared to be wasteful.

26. The cotton planter should make his whole supplies: everything necessary to run the farm.

Apportionment of Land to Crops.

FOR CORN.—Bottom lands, of course, if there are any on the farm—if not, then the least “*thirsty*” lands to be had. Other things being equal select fields in cotton or peas the previous year, as corn does best after these nitrogen-furnishing crops. On upland the chief point to be guarded against is drought. For this reason we suggested the selection of the least “*thirsty*” soil, and would not add *free* but *judicious* manuring. There is no doubt that all crops *properly fed* withstand drought, cold and all other adverse circumstances better than those *stinted or starved*; and a corn crop can be greatly strengthened in this respect, by feeding it liberally with cotton seed—and especially with cotton seed treated

with acid phosphate—100 lbs. latter to 20 to 30 bushels seed. On well-prepared upland, in good heart, we should not hesitate to apply as much as *fifty* bushels cotton seed, thus treated, per acre. Even on the sandy lands of Southern Georgia, Mr. Handaway applies from 60 to 100 bushels per acre without firing corn. True, his land has been well manured for a number of years, and his crops judiciously rotated. His rule, which is perhaps as good as any, is to apply *three-fifths* of the manure in the drill before the corn is planted and *two-fifths* in a side furrow at second working of the corn. On bottom land, where there is no fear of drought, two or three times the above quantity of manure may be profitably applied, taking care with heavy manuring to have a sufficient number of stalks to make a large yield. On this upland, lightly manured, good distance is all-important—on bottom land, heavily manured, crowding is equally essential for the best results; 3 x 6 with 2 stalks in a hill is none too thick if there is manure enough to make 100 bushels corn per acre. In perfecting your plans for a corn crop, ever bear in mind that very *little more labor* is required to make 100 bushels corn per acre, than to make 10.

It is best to put manure for corn in the ground just before or at planting time, and it is not desirable to place it very deep in the soil. Everything should be ready, that planting may begin just as soon as the seasons will permit. Plant whenever it gets warm enough to secure a “*stand*.” Early corn will generally produce best, and besides can be layed by early, so as to give better opportunities to work a cotton crop. It is best to plant a part of the crop in some early maturing variety that will ripen by 1st July, as a precaution against July drought, but the bulk of the crop should be of some large-eared productive variety.—*Southern Cultivator*.

Georgia Farming.

The Cartersville (Ga.) *Express* gives the following as a sample of what can be done on a farm at the South, and that too with white labor alone. One of the items, it will be seen, of the cultivation, is 75 acres of clover. Yet the idea has been prevalent that clover cannot be grown at the South successfully:

Mr. S. Gregory, of Murray county, is one of our most successful farmers. He owns three hundred acres of land. He has about seventy-five acres sown in clover. He has recently shipped a large quantity of seed to Tennessee, for which he received \$2,000, the hay crop being worth \$2,000 more. He also makes corn enough for home consumption, and to fatten pork, the surplus of which brings him from \$600 to \$800 per annum. He makes also from 1,500 to 2,500 bushels of wheat for sale. He plants no cotton but makes all his own supplies, having to buy nothing except groceries. All of this work Mr. Gregory accomplishes with average of help through the year of eight hands, all white. Besides making and harvesting his crops a great deal of improvement is made upon the farm such as solid stone under-draining.

Mr. G. has nine sons (all farmers) and one daughter. He is a widower and is a good catch for any widow willing to shed her weeds.

The American Farmer.

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WM. B. SANDS, }

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Advertisements should reach us by the 20th of the month, to secure insertion in the succeeding issue.

MARCH 1, 1876.

Clubs and Subscriptions.

We are indebted to many friends for clubs of subscribers to the *Farmer* already received, and we repeat our request, that all who can do so will continue to press its claims upon their neighbors and friends, and to forward us such names as they may be able to collect for our subscription lists.

Deferred.

A quantity of matter intended for this issue is unavoidably delayed, from want of space. It will remain seasonable and readable.

Books, Catalogues, Periodicals, &c.

A large number of these received during the past month should have had notice in this number, but the pressure upon our columns crowds them out till our next.

Bound Volumes of the Farmer for 1875.

We have a few copies of the *Farmer* for 1875, neatly bound, which may be had for \$2.00 per volume, at our office, or \$2.25 by mail.

Tobacco and Cotton Fertilizers.

The editor of *The Scientific Farmer* gives the following as an application to be made broadcast to land tobacco:

550 pounds sulphate of ammonia.

700 pounds sulphate of potash.

400 pounds sulphate of magnesia.

200 pounds sulphate of lime.

140 pounds super-phosphate of lime.

The sulphate of ammonia compound should contain 20 per cent. of nitrogen; the sulphate of potash, 16 per cent. of potash; the super-phosphate 13 per cent. of soluble phosphoric acid. If your land is known to be well filled with lime, the last item may be omitted; likewise with the magnesia compound. Otherwise, add them as directed; they are cheap, and will do no harm. No other manure should be applied in connection with these special fertilizers.

A formula for the cotton crop is more difficult to compose, from the lack of sufficient data of experiments with this crop. But from data collected, he says, a careful putting together of pros and cons, we advise, with considerable confidence, the application of the following compounds, per acre, broadcast:

172 pounds sulphate of ammonia.

195 pounds sulphate of potash.

140 pounds super-phosphate of lime.

Guaranteed composition, same as before. Whenever these materials of the desired percentages cannot be conveniently obtained, a simple calculation will show what amounts of other grades will furnish the same quantities of special substances required.

A very intelligent farmer of Southern Maryland is this year growing a crop of wheat fertilized according to a formula politely furnished him by Prof. Stockbridge, and calculated to produce 35 bushels to the acre, above the natural yield; and he intends trying to raise from another formula a crop of 2,000 lbs. of tobacco. We look with much interest for the results of these trials.

The Agricultural College.

Numerous memorials have been presented from various parts of the State, asking the Legislature to make of this, by a purchase of the private interest, a State institution, and to place it in the hands of a board of practical and educated farmers. This proposition, so far as we have had an opportunity of ascertaining, seems to receive a general assent as the best thing to be done to secure the much-needed change in the management of this anomalous institution; but the *Salisbury (Md.) Eastern Shoreman*, a spirited paper, which always takes a lively interest in local agricultural matters, opposes this plan in the following decided manner:

We have received a memorial for signatures, asking the Maryland Legislature to appropriate money sufficient to buy out the rights in the

Maryland Agricultural College and convert it into a "State Farm School and Experimental Station," placing it in charge of a board of intelligent and educated farmers, with authority, if desirable, to remove it from its present site, and with such other powers and duties as may be granted said board.

This institution has already had \$200,000 from the State in appropriations and gets \$6,000 annually from the same source, and the State has not received any benefit whatever from this outlay. In fact the institution has been a failure from the start. At the present time the College is in charge of some sailors who are engaged in preparing a few boys for the Naval Academy, thus entirely subverting the purposes for which it was founded. This state of affairs is not likely to be bettered, and it would be better if the establishment were closed up and the money appropriated to another use. Recognizing, as we do, the necessity for an institution in which the scientific aids to agriculture are taught, and deprecating the utter failure of the plan from which the people at one time expected so much good to result, we are constrained, while advocating the demise of the Agricultural College, to suggest that another plan may be tried. We think the best way to promote the purposes aimed at by this College would be to found a chair of agriculture and agricultural chemistry in the Johns Hopkins University at Baltimore. The annual appropriation of \$6,000 would be ample for the purpose and would result in great good; indeed, far greater good than this College would or could accomplish with even good management. This money would be sufficient to employ a first-class professor and tutor and leave a fine surplus for apparatus, &c. In addition to this the University would secure a greater number of pupils than an isolated affair in the country could possibly attract: thus in addition to teaching more effectively, scatter the benefits among a greater number of people.

It is sheer folly to throw good money after bad, and the people are opposed to any more appropriations to this *effete* Agricultural College. Therefore, instead of devising schemes for trying to keep life into it, we are convinced we speak the sentiments of the people in advising its discontinuance. Therefore we warn our readers against this petition.

President Gilman, of the Johns Hopkins University, whose public inauguration took place on the 22d of February, in the presence of a distinguished company, said in his inaugural that the course of instruction there would depend in some measure on the changes effected in the City College, St. John's and the Agricultural College; but we think the plan proposed by our cotemporary will hardly be practicable at present, and the Agricultural College ought either at once to be thoroughly reformed or abolished.

Tobacco Crops in North Carolina.

The *Torch Light*, published at Oxford, Granville Co., N. C., gives the following reports of crops raised in that county:

Mr. B. F. Hester, who lives four miles from Oxford, has averaged for at least three years, \$4,000 net on ten acres of land planted in tobacco. He worked two men and a boy. He bought

about \$120 worth of foreign fertilizers. Besides this he made corn for home consumption, raised his own pork, and made his own wheat, oats, &c.

Mr. Mitchell Currin's three sons, the eldest not more than eighteen, and the youngest an invalid who worked only when he felt able, made a tobacco crop which fetched over \$3,000 net. The expenses were \$75 for fertilizers, and \$5 for extra help. Corn, fodder, oats, &c., were raised besides.

It says it expects to publish other reports which it feels confident will show that at least ten Granville farmers for several years have averaged \$900, or more, to the hand, on tobacco alone, besides raising corn, wheat, fodder, oats, &c. We shall begin at once to gather the necessary statistics.

Granville farmers have never failed to secure higher prices than the farmers of Virginia in any of their markets. This will be borne out by the tobacco-sellers of Petersburg, by Hill & Skinker of Richmond, and by Pace and other sellers at Danville.

If you want to secure homes where lands are cheap, where health is good, where society is very desirable, and where the rewards of labor are large, come to Granville county, N. C.

Maryland Granges.

Nanjemoy Grange.

A new grange of the order of Patrons of Husbandry, with the above name, has been formed at Kingsville, Baltimore Co. Officers:

Master, Dr. E. W. Altwater; Overseer, Ira Freeman; Lecturer, D. S. Gittings, Jr.; Steward, Chas. H. Quinlin; Assistant Steward, S. H. Wilson; Chaplain, E. C. Bayley; Treasurer, Garret Brown; Secretary, Mary H. Brown; Gatekeeper, Joseph Hyde; Ceres, Mrs. M. E. Wilson; Pomona, Mrs. Helen C. Reynolds; Flora, Miss Hattie Reynolds; Lady Assistant Steward, Mrs. E. W. Altwater.

Glencoe Grange, Baltimore County.

The following officers have been elected in this grange:

Master, Dickinson Gorsuch; Overseer, Geo. K. Ensor; Lecturer, Wm. B. Sands; Secretary, W. W. C. Stewart; Treasurer, Miss M. D. Scott; Chaplain, Nelson R. Miles; Steward, Upton H. Torbert; Assistant Steward, Dr. Moses Merryman; Gatekeeper, Thos. T. Gorsuch; Ceres, Mrs. D. Gorsuch; Pomona, Mrs. T. T. Gorsuch; Flora, Miss Virginia Stewart; Lady Assistant Steward, Miss Zillah Evans.

Zachia Grange.

The following is a list of the officers elected by Zachia (Charles Co.) Grange for the present year:

Worthy Master, George Dent, Jr.; Worthy Overseer, Hugh C. Nevitt; Worthy Lecturer, F. N. Digges; Steward, Charles A. Neale; Assistant Steward, Francis Nevitt; Treasurer, Col. Samuel Cox; Secretary, Peter W. Robey; Chaplain, John F. Thompson; Doorkeeper, Richard Taylor; Ceres, Mrs. P. W. Robey; Pomona, Mrs. George Dent; Flora, Mrs. Alfred Nalley; Lady Assistant Steward, Mrs. J. F. Thompson.

The Worthy Master, Hugh Mitchell, of Crescentia Grange, will install the officers at the Hall of Zachia Grange, on the third Saturday of March.

SCAB IN SHEEP.—Tho. M. Eldridge, of Hopkins Co., Texas, gives this recipe: A wash of tobacco and polk-root I found to do more good than any other remedy I ever tried. Ten pounds of tobacco and twenty-five pounds of polk-root boiled in a sufficient quantity of water will wash 100 head, if done savingly. The remedy is very severe, but has done more towards curing the scab than any other remedy tried in our county. Wash after shearing. Soft soap applied in winter will abate it.

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Baltimore Markets—February 29.

The quotations below are Wholesale Prices.

Breadstuffs.—Flour.—Market fairly active, with quotations as follows: Howard St. Super, \$3.75@4.00; do. common to fair Extra, \$4.95@5.00; do. good to choice do., \$5.25@5.37; do. Family, \$5.50@5.75; Ohio and Indiana Super, \$4.00; do. Extra, \$4.25@5.00; do. Family, \$5.25@5.50; Northwestern Spring Extra, \$5.00@5.75; City Mills Extra, \$5.75@6.25; do. Rio brands Extra, \$5.75@7.00; Fancy brands, \$3.75; Rye flour, \$5.00@5.25; Corn Meal, City, \$3.25; Western, \$3.00; Buckwheat Meal, Penna., \$3.00@3.25; N. Y., \$3.25@2.50.

Wheat.—Demand light; market quiet. We quote Southern red, good to prime, 135@140 cents; do. white, 120@150 cents; do. amber, 150@155 for choice to fancy; Western No. 2 red, 138 cents.

Corn.—Market for Southern active; for Western, dull. Southern yellow, new, 56@58 cents; do. white, new, 54@62 cents; Western mixed, 60½@60¾ cents.

Oats.—In light demand. Western mixed, good to prime, 41@43 cents; Southern do., 43@45 cents.

Rye.—Nominal at 75@83 cts. for fair to prime.

Cotton.—Market weak and prices trending downward. We quote good middling 12½ cents; middling 12½@13½ cents; low middling 11½@11¾ cents; good ordinary 9½@10¼ cents.

Hay and Straw.—In light demand. Cecil Co. (Md.) Timothy \$3 @34; Pennsylvania and New York \$18@21; Western \$16@19; mixed \$17@20; Clover \$16@18; wheat straw \$12; oat \$12@14; rye \$18 ½ ton.

Mill Feed.—City Mills Middlings \$15; do. Brownstuff \$18; Western Bran \$16.50@17.

Live Stock.—Beef Cattle.—Market quiet. Best on sale 6.5¢; cents; that generally rated first quality 5@6 cents; medium or good fair quality 4½@5 cents; ordinary thin Steers, Oxen and Cows 2½@3½ cents.

Hogs.—Receipts light, and prices advancing. We quote from 10½ to 12 cents.

Sheep.—Demand good for good Sheep; others hard to sell. We quote at 4½@7½ cents.

Provisions.—Firm and prices tending upwards. We quote Shoulders 9½ cents; clear rib Sides 12½ cents; Bacon Shoulders 10½ cents; clear rib Sides 13@13½ cts.; Hams 16 cents; Lard 14 cents; Mess Pork \$35. Butter—New York 30@35 cents; Western 25@30.

Salt.—Liverpool Ground Alum, \$1.15@1.25; do. fine, \$2.10@2.50 per sack; Turk's Island, 30@35 cents per bushel.

Seeds.—Timothy, \$2.75@3.00 per bushel; Clover, 14 cents per lb.; Flaxseed, \$1.50@1.60 per bushel.

Tobacco.—Market for Maryland more active, the medium grades of new crop selling well. We quote: frosted, \$4.00@4.50; sound common, \$5.00@5.50; good common, \$6.00@6.50; middling, \$3.00@3.50; good to fine red, \$9.00@11.00; Virginia, common and good lugs, \$6.50@8.50; common to medium leaf, \$2.00@11.00; fair to good, \$12.00@14.00; selections, \$15.00@20.00.

NEW ADVERTISEMENTS.

- J. J. Turner & Co.—Caution to Farmers.
 J. J. Turner & Co.—"Excelsior" for Corn and Tobacco.
 J. J. Turner & Co.—Ammoniated Super-phosphate.
 J. J. Turner & Co.—High Grade Peruvian Guano.
 P. Zell & Sons—Zell's super-phosphate.
 Jno. S. Reese & Co.—Soluble Pacific Guano.
 Maryland Fertilizing Co.—Fertilizers.
 Joshua Thomas—Buckeye Mower and Sweepstakes Thresher.
 R. L. Harvey—Granger Cultivator.
 S. Cottingham, Jr. & Co.—Agricultural Implements, Seeds, &c.
 J. M. Thorburn & Co.—New Potatoes.
 Z. O. Daniel—Thorough-bred Stock.
 W. A. Myers—Fowls and Pigs.
 People's Gas Co.—Gas Lime.
 S. Sands & Son—Farmers and Planters' Agency.
 T. C. Maxwell & Bro.—Trees and Plants.
 J. Bolgiano & Son—Seeds, Bulbs, &c.
 John Cook—Small Fruit Plants.

